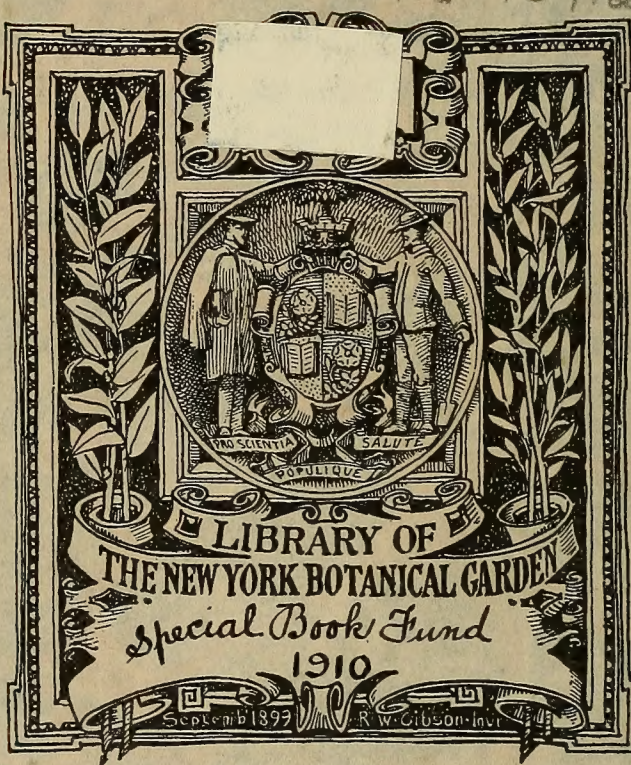


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TO OUR READERS.

It may be well to devote a few brief sentences to recall to your memory one or two of the events of the past six months; for wisdom is the application of knowledge extracted from the past and applied to the future.

In gardening great events rarely occur, but there are a continued series of small events in its practice which combine, and become of marked importance. Such a combination has resulted in the prevalence of conservatories. A majority of the houses now springing up for the middle thousands in our metropolitan districts have each a conservatory. In these conservatories we recognise an increased source of pleasure, health, home enjoyment, and love of the beautiful. The Chancellor of the Exchequer had no such result in view when he proposed the repeal of the duty on glass, and we have the high satisfaction of knowing that our pages helped to the knowledge which created a demand for their erection.

When we announced that cocoa-nut fibre dust is excellent for potted Ferns and some other plants, we little thought that we were introducing such an additional source of fertility to the gardener; that we should be the cause of sweeping away the mountains of this refuse which the manufacturers gave gladly to any who would fetch it away, but which they now can afford to advertise, sell at a good price, and cannot manufacture fast enough. It has become an ingredient in the composts of many large gardening establishments; and from being timidly used in flower-pots, is now employed in bushels to banks of Rhododendrons, Strawberry-beds, and other extensive plantations.

Within the six months embraced by this volume the memorial to the Prince President of the Royal Horticultural Society, has been erected, and the representatives of the people have refused to purchase its neighbouring International Exhibition building. Had that wise Prince survived he would have applauded that rejection, for he never sanctioned attempts to adapt incompatibles; and we now hope to see a building rise from the foundations of the one condemned that will be a worthy and suitable national museum, and that will increase the attractions of the national Horticultural Society's Garden.

It is in no spirit of self-laudation, or from any prompting of self-interest, that we assume to have had an influence in promoting those occurrences, but it is paying a due tribute to those able men who contribute to our pages, and whose skill and high character gain for them an entrance into most places where gardening is cherished. Illness has withdrawn from us one of the most able of those men; but more than one of equal skill have been added to our staff, and we have no fear that our pages will not continue to be welcome, as we are told by a Lancashire clergyman they have been hitherto "to my parsonage, our squire's drawing-room, his gardener's parlour, and our village reading-room."

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WEEKLY CALENDAR.

Day of M th Week.	Day of Week.	JANUARY 6-12, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.		Sun Sets.		Moon Rises and Sets.		Moon's Age.	Clock before Sun.		Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	m.	h.	m.	h.	m.	h.		m.	s.	
6	Tu	EPIPHANY: Twelfth day.	30.052-30.044	48-30	N.W.	—	8	af 8	5	af 4	55	a 5	16	6	2	6
7	W	Black Hellebore flowers.	30.061-29.897	52-27	N.W.	—	7	8	6	4	4	7	17	6	28	7
8	Tu	Grey Wagtail seen.	29.725-29.619	50-27	W.	—	7	8	7	4	12	8	18	6	54	8
9	F	Hedge Dunnock sings.	29.697-29.568	54-43	S.W.	—	6	8	8	4	21	9	19	7	19	9
10	S	Linnaeus d. 1778.	29.710-29.577	51-40	S.W.	·02	6	8	10	4	31	10	20	7	44	10
11	Scn	1 SUNDAY AFTER EPIPHANY.	29.577-29.275	49-30	S.W.	·04	5	8	11	4	44	11	21	8	8	11
12	M	J. Ray d. 1705. B.	29.714-29.498	49-27	N.W.	·01	4	8	13	4	morn.		22	8	31	12

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 41.1° and 30.1° respectively. The greatest heat, 54°, occurred on the 6th and 7th, in 1845; and the lowest cold, 6° on the 8th, in 1841, and 1861. During the period 152 days were fine, and on 100 rain fell.

POTATOES.



MORE than one answer to correspondents is contained in the following, independent of much very reliable information relative to Potato culture. —Eds.]

Place aux Dames, I say,

in answer to Mr. Bird; I am sorry I have only a limited supply of Potato sets to give away, and I cannot resist the appeal of Lady Georgina Oakley for her noble purpose. The Lapstone Kidneys, I presume, are common enough; not so, however, the Mitchell's Early Albion Kidney. I hunted out that variety when it was almost worth its weight in silver at Mr. Duncan Hairs', who formerly lived in St. Martin's Lane, London, and I have kept it well before the public ever since. I shall be happy to send Mr. Bird some very small tubers—if he thinks it would be worth his while to grow them for sets for another year—of both sorts, if he will forward me the address.

In a letter I received from Mr. Daintree a few days ago he tells me that the Lapstone with him proves very subject to the disease; and so, doubtless, it would with me, as well as every other variety, if I cultivated them on the flat. If any one would make it worth my while I would cause my whole crop of Potatoes in this cold shady garden any year to become stricken with disease; and, goodness knows, at the certain stage of their growth it is a very nervous time with me, even on the ridge system that I do adopt. But the beauty of the Lapstone is, that when the disease does affect the foliage it may be taken up carefully at an early stage of growth, and become very much improved in the ripening process by being laid moderately thin in a dark place. I ought to be able to procure sets from the allotment people here; but the fact is they are slovenly, and so mix their sorts into one indiscriminate jumble that the task to separate them would prove endless.

In answer to "PRESBYTER," and in a great measure I must necessarily repeat myself, allow me to say that I choose middling-sized whole Potatoes, which are grown under my own observation on my man Friday's allotment—a light hazel soil, and opposite in its nature to my own, which is a sound artificially-made darkish gravelly loam. The seed is now disposed in single layers upon shallow wooden trays, and secured from contact with damp in an underground cellar, having a temperature ranging from 40° to 45°; its dimensions are 9 feet by 18 feet, and it has a fair twilight produced by a glazed aperture measuring 3 feet by about 1 foot. The young

eyes on the sets are shooting well forth. I shall soon attend to the disbudding process, and leave one shoot upon those early sets which are the size of a bantam's egg, and two shoots to those which exceed that size in all cases; and by planting-time these shoots allowed to remain will become robust and dark with health, with young rootlets starting from around their bases, sturdy, so to speak, as the quills of a porcupine. Let me strictly inculcate that the trays whereon the tubers rest be kept perfectly dry, otherwise the roots which strike from the base of the shoots, instead of remaining strong and wiry, will grow away weak, and become matted together, deteriorating the stamina of the set. I trust the advantage just stated over the old enervating "spurting" and cutting method will be plainly seen. Nothing is here lost to the Potato; whatever virtue has gone out of it remains elaborated in the young shoot, and the tuber is delivered to the soil with its powers about it, in addition to a young plant with rootlets and leaves making ready to compete for the light of day, and to begin their fructifying functions without loss of time. When I plant, at each end of the row opposite to the sets I drive down a substantial piece of stake to remain there till the following year, in order to point out that the tubers of next year shall not occupy the site of this. I never use raw manure at the time of planting. Quicklime or mortar rubbish, which is spread over the surface soil and slightly worked-in just before planting-time, at the beginning of March, in a fine dry time, is what I prefer.

For early Potatoes I allow quite 36 inches between the rows, and for store Potatoes 42 inches. Strain a line from two pegs where the rows are to be, and place the sets upon the surface of the soil at a foot distance for the earlier and 18 inches at least, if the ground is good, for large late sorts. Then readjust the lines to the full width of a rather-worn spade, and mark out for a trench centrally between the two rows of Potatoes. Cut down rather slantingly inwards, in order to leave the sides even, and cast out every other spadeful right and left, though not exactly plump on to the shoots of the sets. The crumbs that are afterwards shovelled out take that central position harmlessly; and we then have a trench formed nearly a spit deep, which is intended to become occupied with the Cabbage tribe anon. Formerly, as each trench was finished I used to introduce raw dung, and dig that into the bottom; but now I merely fork-up the bottoms of the trenches with a three-tined fork I had made on purpose, as, having a good supply of liquid manure (house sewage) I use it bountifully instead when the plants have attained to a good size.

In this garden, which is partly overlooked by the living-room windows, I like to see everything appearing ship-shape; but raw dung hauled about a space of ground after the Potatoes are taken up, and then followed by the planting-out of lanky Broccoli plants, &c., is never pleasant in the height of summer either to the nose or eye; and under the most favourable circumstances the plants will take a month or six weeks to recover themselves and to

look decent. But by the trench rule they can be planted out expeditiously at their proper stage of growth without being kept waiting for the Potatoes to come off, and they seldom incline to club with me in the trenches.

Again, how seldom do we find the earthing-up of Potatoes done properly, or at the proper nick of time. In the above system the practice is quite superseded, for from the moment they are planted until they are lifted, nothing in that way is required, because quite sufficient soil is cast upon them in the first instance, which also insures their non-appearance above ground until the first or second week in May, when danger from frosts is over, and we may fairly anticipate their ripening to have become accelerated a fortnight or three weeks.

Formerly I allowed the haulm of my Potatoes to fall down on each side the ridges, but I found that with the later sorts they interfered with and muddled-up the occupants in the trenches; so to obviate this I now drive stoutish stakes on each side of the ridge, 5 or 6 yards apart, and strain a line of tar cord to them to retain the haulm in an upright position, and, perhaps, once or twice I clip off with the garden shears the overhanging points, should they become too long and dense so as to exclude the light and air from the Cabbageworts. The clippings I clear away in a basket, when I take the opportunity to clutch away any stray weeds above, and to catch and kill the caterpillars from off the Cabbage tribe below—a very necessary procedure. From several years' experience of the system, the conclusions I have arrived at are—when a dry season arrives the tubers have a larger and moister bulk of soil to grow in; should a wet season occur, the water drains well away into the trenches; and nearly a double surface of earth is gained for the beneficial influence of atmospheric action. When the Potatoes are lifted a quantity of soil falls down, which creates a first moulding for the Cabbageworts, which appear a healthy and flourishing crop upon the ground at once; a little drawn they may be, but the open exposure soon rectifies all that, and it is astonishing the produce that we get from this small garden under the above system.

In reference especially to "PRESBYTER'S" inquiry about planting distances, I will urge him to observe, that the sets are to be dropped from 12 to 18 inches apart, according to their size and sorts, and the rows for store Potatoes must be 42 inches apart; but 6 inches between each two ridges in the calculation which he requires, must be subtracted for trenchwork, to the account of the Broccolis; 8 inches would be a fairer measurement, but it would complicate the calculation; so let it go at 4 square yards of land to 31 lbs. of Daintree's Seedling Potatoes, which would be about 16 tons, or rather better than 223 sacks, at three bushels per sack, per acre. This is about the average the garden has produced this year, and a very good crop it was, the best I ever had; in fact, so good that I routed up the Broccoli and determined to treat the quarter to a fallow, and a thorough trenching. I can liken the ground now to nothing so much as "Talpa's" field. I suppose you have read "Talpa," and seen the illustration of that immortal harrowing by Cruikshank. Everybody should read and digest "Talpa," and then they will be able to conceive all the more easily how it is that I succeed so well in growing Potatoes.

"There, now, that is very good," some people may say, "he is comparing his small garden to a field." Be it so, yet if I can throw out a useful hint to my fellow men, my object is gained. I write for cultivators of small plots, yet my facts may be suggestive to the cultivators of many acres, just as the tiny, fine-drawn spring which works a watch, so diminutive that a four-pennypiece will cover it, enlarged and applied, enables the largest ship chronometer to keep most excellent time.—UPWARDS AND ONWARDS.

FANCY PANSIES—BEST PROPAGATING-BED— DOUBLE CHINESE PRIMROSES.

At page 790 of the last Number of this Journal there is a chapter on the "Portraits of Plants, Flowers, and Fruits;" and the bottom paragraph of it, on that page, is about Pansies from the "Florist and Pomologist," the Number for last December, where the kinds are very beautifully portrayed in their gayest colours; and there the flowers are rather larger than the biggest of the florists' kinds, but not quite so much after Euclid as a florist could exhibit them if he had undertaken to dress them up for show people, or for the chance of a prize from the Floral Committee. The Floral Committee, however, do not always go the length of their tether in the direction of Euclid, for they

had given first-class prizes already to some of these very beautiful Pansies, as well as to a pin-eyed Primrose, and to other primitives and primeworts of the school of roundabouts; and by so doing they have made a better impression on their fellow labourers, and, probably, on the bulk of the exhibitors of "the first instance," than you or your humble servant could have anticipated in so short a period. There is no need, therefore, that I should apologise for writing about my own favourite race of Pansies, or to apprehend that I shall ever be called over the coals for going at them at the very first opening of the budget for the new year.

It was only three years since that I was so intent upon Fancy Pansies that I had a whole collection of them from the very fountain-head of the race in Yorkshire—Mr. Dean, of Shipley—who has done more to soften my feelings towards the florists than even the liberality of the florists on the Floral Committee. But it is not so much for that collection of beautiful Fancy Pansies that I am going to open the new year, as for one kind of Pansy that was in that collection; for that one kind has brought me more grist to my mill at Surbiton than all my seedling Geraniums, which I distribute among my neighbours by the score every autumn after they are skimmed by the dealers.

It was the Magpie Pansy that proved so lucky to me. Mr. Dean sent me word to look after the Magpie and see what I could make of it. I did look after it, and, instead of making something of it, I have been made more of myself on account of it than ever I was about any plant which I ever took to before.

You can hardly conceive how passionately fond the ladies are of this Pansy the moment they see it, or how it confirms the opinion that ladies can decide about flowers on the instant by their own intuitive perception. It was only last spring I was going up the road with a Magpie Pansy nosegay in my hand, to show to a young lady who was making a new garden, when I met two ladies who knew me, and both of them let go their dresses to lift up their hands in admiration of the nosegay; and when I made my apologies for being the cause of the accidental soiling of the bottom of the dresses, they declared, on the instant, they would not have lost the sight for—no matter what. After that I found the young lady at home, and in the new garden, and then there was a repetition, all but about the dress; and nothing would do but her ladyship must have a Magpie Pansy for the new garden. Well, what to do was hard to tell. I had only five plants left me. After taking up the last pair, I meant to part with them to Mr. Salter, who first raised this beautiful flower over at Versailles sixteen or seventeen years since. So you see the age of a really good flower has nothing to do with its merits in the eyes of those who value flowers for their own sakes. But it all ended in the old way. The lady had a pair of the Magpie for the new garden, and I had five more plants in my stock than I intended; and they paid me better than all the rest, for their same now will go to the ends of the earth and be a comfort to many, which is the best pay after all. The only way to manage well in a pinch is to make no difficulty about the object; and the way to divide five plants between two people is merely to give two and a half to each, of course. But that was not the way I did. I took up the best pair for the lady, and it so happened they were all roots right up to the collar, owing to their being manured with cocoa-nut dust, which set-off the rest of my Pansies all into straw and foliage, that there never was anything like before in the family. Here was a chance! I divided the two plants into nine good ones, replanted seven of the pieces for myself, and took two fair-sized plants for the new garden; and both in the new garden and in my own the same result happened, which I should never have thought of. It was a lucky accident!

But I must bring you back to the year before last, to where I explained, once or twice, that the Magpie Pansy was only a spring-flowering plant, very like the prettiest stove plant we have—the *Torenia asiatica*; but as you may not know that *Torenia*, and as some others might not have seen a live magpie, I must tell them that it is a beautiful pied bird, a jet black, tinged with the deepest purple on the wings, with a metallic lustre, and the centre of each wing as white as snow, and that is how the Magpie Pansy is marked; there is a soft white mark on each, or on so many of the petals, and all the rest are jet black, but so beautifully tinged with the deepest purple, as to give even a tint superior to that on the wings of a live magpie itself.

Well, then, the two similar instances in the two gardens in 1862 go to prove, decidedly, that the Magpie Pansy is, or may

be, made a summer flower to hold on to the end of September. When it was only a spring flower it moulted, as it were, in June, and lost all the white, and without the contrast of the white it was no better than a blackbird after midsummer. Now, however, by dividing the plants late in April, instead of late in the previous autumn, as has been the usual custom, the growth of the plant is continuous, and has no rest for moulting; so the interesting contrast and the lovely tints of the Magpie Pansy may be richly enjoyed to the very end of the flower-garden season. The plants, then, are to be cut back and left as they are the whole of the winter, and on to the last week in April. Another lot might be cut back at the end of July, and be replanted or not a month later—say on a dripping day towards the end of August, and such plants in a favourable spring would be in bloom as the March Crocuses were going off.

If I had known all this in time, and had been aware the Editors of the "Florist and Pomologist" contemplated a plate of Pansies, I would have told them the story, and suggested to them to have added a figure of the Magpie on that plate. But now I have almost as pleasant a task—namely, to recommend every one of my readers to be on the look-out for the Magpie Pansy, if they have it not, and, to make their own plates full at home, to order the four kinds of Pansies which are so well set off in the plate in the "Florist and Pomologist." The names and colours are at the aforesaid page of this Journal (page 790); but as a good tale is not the worse for being twice told, I may just say that I was present when a first-class certificate was awarded to Mr. Dean for Princess Alice, the very largest and best of the white-faced Pansies, with a deep purple centre. The next two, Mrs. Moore and Leotard, I have not yet seen alive, but they are extraordinary, particularly Mrs. Moore, which has the bottom and two side petals deeply banded with the same crimson tint as one sees now and then in some of the crimson Nosegays. The ground colour is yellow, splendidly shaded with the feathered deep purple blotches in the centre, and straw-coloured back petals edged like the new tricolor Variegated Geraniums; and Leotard is as a noble in court costume, the rest of the dress being a rich shade of mauve, with the robe in Bishop's purple, and the rest to match. The last figure on the plate is the Double Purple, which has before been noticed in these pages, and which the "Florist and Pomologist" rightly says "is not new, and was known many years ago; but like many other hardy plants of great beauty, it has been neglected because it did not happen to bask in the sunshine of popularity. It is, however, a charming border plant, and should be in every garden. Our sample for figuring was obtained from Messrs. Carter & Co., who, we understand, have been successful in becoming possessed of this long-lost and ornamental variety, which is likely now to be appreciated for its own merits, regardless of the stringent rules of the florist."

All this is from the heart and hands of the "Florist" itself, being another remarkable proof of what I have just stated about the liberality of the florists of the present day. "Stringent rules" are quite right and proper when volunteers are out on parade, but sadly out of place when they are among the ladies on gala days, when the stringent rules should all point to how to please them the most.

I will now tell you how this Pansy can be made more pleasing still. I had that plant in my hands before any of the commercial people had ever seen it, or, at least, I had cut flowers of it from our office; and it is the very plant for which I had the first-class certificate from that flying quorum of the Floral Committee on that show day, when I was handing it about in ecstasies at finding that every lady to whom I had shown it was also "charmed" with it. And what will Mr. March, the author of that charming book on drawing-room decoration, say when he sees such additions for his tasteful designs as these, the Magpie and Leotard Pansies? The misfortune for me is, that my garden is so rich now that few Pansies can stand it without being staked; but I shall certainly place Leotard for its colour, and Double Purple for its ladylike setting, side by side with my most favourite Torenia-like Magpie Pansy, and I shall not cease telling every move they make until the whole country is full of their charms.

The next entry in my day-book, is a promise I made last year that I would tell how the double Chinese Primroses are made into huge specimens hereabouts, and in no place more so than in the Kingston Nursery. There is nothing about London which can come near to them. Last week I measured the largest plant here on purpose for this notice, and the diameter of the

plant was within a fraction of being 1 yard across; and there were thirty-two crowns, or divisions, in that one plant, or, as one might put it, thirty-two good cuttings could now be made from that plant, without touching the spread of the branches as I may call it.

Now, then, let us take one of those thirty-two cuttings, and go on with it for the next three years, and if we can do it as well as they do them at Kingston, we shall not be much short of a yard-through plant by the end of the period. First of all—say the very best propagating-bed that could be made, or 18 inches thick of the cocoa-nut refuse *over an open tank*, or tank-bed, for that is, without the smallest doubt, the very best way that has yet been tried and proved, for it has been proved at the Royal Gardens at Kew. When a body of the stuff is once warmed to 80° or 90°, it will keep to that degree for a very long period with the ordinary care of keeping a greenhouse warm; but over a close tank, or over rubble and hot-water pipes, it is ten times worse than useless, for I have proved that part of the play myself. Once get the bottom of the cocoa-nut dust quite dry by the dry heat from a pipe or flue, and you might just as well endeavour to drive heat through a two-inch deal board. Charcoal itself is a better conductor of heat than this stuff; but keep its own natural moistness in it by the vapour from an open hot-water tank, and there is no other substance will come near it in its capacity for receiving heat and for retaining it the longest. All that has been already perfectly proved.

Suppose, then, such a propagating-bed, and such a cutting from a double white or red Chinese Primula, and a thumb-pot full of very sandy peat, with the usual covering of white sand on the surface, not neglecting a fair drainage, and the cutting put in and watered on a fine morning in February. When the pot has drained off the superfluous water and the cutting is dry in the leaves, the pot is plunged in 85° bottom heat, and for the next six weeks the heat is not one degree lower than at first, and may be a little more at times. The bell-glass over the cutting is twice as large as the thumb-pot would seem to require, in order to allow twice the usual space over the cutting, which makes it four times less liable to damp-off than under a very tight fit. But ere the end of the six weeks there are roots, and it is necessary to tilt the bell-glass a little from sundown to breakfast-time next day, until at last the young thing is able to stand upright of itself; and before the roots get crowded in the cutting-pot the plant is shifted into a No. 60-pot, and a little leaf mould and loam are given with the sand and peat. The pot is now plunged in another hotbed, but not nearly so hot as the first; and in a very short time the second pot is full enough of roots to need another shift, and that is into the next size, or No. 48-pot. More loam again, and leaf mould, peat, and sand, and the pot and plant are now fit to stand on a shelf across the cold end of a stove. By the time No. 48 is squeezed into No. 32 the plant is fit for the greenhouse, and we are at Midsummer-day. One more shift into a No. 24-pot brings us on to the middle or end of August; and two-thirds of the compost are now the best maiden yellow loam, and the one-third about equal quantities of leaf mould, peat, and sand. From going into No. 24-pot, all through the winter and next spring, give no more water than will keep the plant from flagging, and as much heat only as to save from frost. Any time late in the spring, or early in the summer, when all the roots seem to have got into fair working order, the plant is put into a No. 2-pot—the biggest pot but one that is made in regular casts, or just the one-shift system. In this No. 2-pot the plant remains two years and gives two crops of flowers, and each crop is worth more money than the plant, and this has been done for years.

D. BEATON.

THE FLOWERS OF LAST SEASON.

BEDDING GERANIUMS.

SOME time since I gave a sort of running commentary on the new Verbenas which had been ushered into public life during the past season, the notes I made being from some in my own garden with which I had been liberally supplied by the raisers. I now proceed to do the same with the bedding Pelargoniums—or Geraniums, as I think they had much better have been called, and as Mr. Beaton will call them. I could not, of course, expect to find that I coincided in opinion with others who had similar opportunities of judging Verbenas, and never for once meant to say more than what they were as far as my own

judgment went, and the same remark applies to the subject of the present paper.

"It never rains but it pours;" and so now, because some person has written well and forcibly on the present style of gardening, deprecating the extravagant lengths to which it has been carried, others have followed in the wake, telling us that we must give it up altogether, and that it should only be reserved for public establishments. Now, although I have been one of those who have written most strongly against the outrageous lengths to which beds and ribbons have been carried, yet I think this is just as bad as the other extreme. What we want is a combination of both; and for those who, like myself, consider that one great advantage in a garden is to be able to gather a bouquet at any time for one's friends, it is a positive boon to have beds of scarlet Geraniums, Verbenas, and such like, always affording a supply, and always brilliant in their colouring.

The multiplicity of sorts is apt to puzzle and perplex an inquirer after such as may be most suited for his purpose; and notwithstanding that every year witnesses an accession of a considerable number, yet those which permanently remain in the more select lists are, comparatively speaking, few in number. New tints of colour are, of course, not to be easily found, and in habit we cannot get much beyond the kinds we have. It must be something, then, of superior excellence that should be marked for permanence in our gardens. Thus, although superiors to Tom Thumb, Attraction, and Punch have been over and over again announced, I think they are still unsurpassed; and although better variegated ones than Bijou have been as often promised to us, I do not think that there is one superior to it in its own peculiar shade of colour. It is somewhat large in its style of growth, but this can be obviated by pinching-back; but if we could obtain what I have not yet seen—the same good foliage and large flowers on a more compact style of growth, it would be very desirable.

Having these notions on the subject, I am prepared beforehand to receive with much caution the high-sounding characters we so often have with new kinds, and to wait for that time which proveth all things before putting off the old love. "Too fastidious," some would say; but surely it is better that a few things should be known to be good than a multitude of inferior ones passed off on us to fill up gardens and create only disappointment. The first season that a flower is to be let out there are many, who will and must have everything new, who do not care whether it be bad or good; but for the more general public greater caution must be exercised. I begin, then, with a section which seems only to be in the hands of Messrs. E. G. Henderson & Co.—I mean the very beautiful Tricolor Golden-zoned varieties, and of which we have now some very beautiful examples. I have also included Silver Tricolor kinds.

SECTION I.—TRICOLOR GOLDEN AND SILVER-LEAVED VARIETIES.

Mrs. Pollock.—Although not of the last season, yet its previous high price made it comparatively unknown. It is very beautiful; fine habit; the zone bright red, with occasional deep crimson blotches, retaining its colouring in all weathers.

Sunset.—A flower very similar to the above, perhaps a little brighter, but certainly not so good in habit; still it may be safely recommended. A bed of these varieties will, in a fine summer be a very handsome sight.

Countess.—One of the Silver Tricolor varieties. My experience of these for some years induces me to believe that they will never make effective out-of-door plants; but for pots they are very attractive, and this is one of the best.

SECTION II.—VARIEGATED-LEAVED VARIETIES.

Gold Leaf (E. G. Henderson & Co).—This style of leaf does not please me, and in my garden it was very delicate.

Mrs. Milford (E. G. Henderson & Co.).—I would give the same character to this. I do not admire them.

Queen of Queens (Bull).—A free-growing and free-flowering variety. The flowers are large, and the silver margin is very clear and distinct.

Cheerfulness (Turner).—Foliage green with white margin. Flowers red and well-shaped.

SECTION III.—HORSESHOE GERANIUMS WITH FLOWERS OF SALMON AND SCARLET OF VARIOUS SHADES.

Baron Ricasoli (E. G. Henderson & Co.).—A very neat dwarf-growing variety in the style of Baron Hugel, but with

much better flowers; the zone in the leaves being dark and well defined.

Herald of Spring (Turner).—A very pleasing and effective variety; the leaves marked with a broad deep-coloured zone; the flowers large and freely produced. Very early as a pot plant, quite justifying its name. Has received three first-class certificates.

Woodwardiana.—(E. G. Henderson & Co.).—As like the preceding as two peas, but not so free-flowering.

Gem of Gems (Bull).—I grew a plant of this which would have filled a bushel basket, and it had one truss of bloom on it, and this in the same bed where the other varieties were; so that it was no excess of manure that led it to do this.

SECTION IV.—PINK AND ROSE VARIETIES.

Prince of Hesse (Turner).—Pale salmon pink; flowers well-arranged in a large even truss; the habit moderate. Suited for pot culture rather than for the open border—a remark which I believe to be applicable to all those in this section.

Some other flowers, such as the Nosegay section—Magenta, &c., I have not seen. Those which I have remarked upon here as good will, I believe, not disappoint any who may purchase them. It will thus be seen that no addition, as far as I have seen, worth mentioning, has been made to the plain scarlet-flowering varieties represented by Tom Thumb and Attraction, the more fancy colours and sections being mainly run upon. Nosegays I can see no beauty in, though Mr. Beaton will think me a heretic for so doing.

Will you allow me to correct a misprint in my paper on Chrysanthemums? For "he has this year eighty large ones," read thirty; and for, in the last paragraph "in my first section," read "his first section."—D., Deal.

EPACRIS CULTURE.

In answer to "Y. Z.," I would say that if there is no mention of this group in the three last volumes, there is plenty of writing respecting them in earlier volumes. It would not serve our correspondent to refer him to these articles, so I will tell him how to manage the nice selection of young plants he has obtained, now coming into flower, and which he is anxious to increase in size as soon as possible.

One great advantage of cultivating Epacris in mixed collections is, that they will stand rougher treatment than Ericas, and without showing any signs of mildew, which is almost sure to attack Ericas in such circumstances. Another advantage is, that most of them will bloom, or may be made to bloom in the winter and early spring months. Another peculiarity is, that as they bloom best on somewhat long, well-ripened shoots of the previous summer, like the Black Currant, the plants are generally most attractive when rather young, instead of very old and bushy.

In propagating the Epacris, I would prefer as times the end of February and the end of May. In the first case I would select firmish side shoots, and the points of long flowering-shoots, from 1½ to 2 inches in length, rather firm at the base, clean cut through there. In the second case we could thin-out young shoots after pruning, about an inch long, slipping them off with a sharp knife close to the older shoot. In both cases remove the leaves for about a quarter of an inch next to the base, and insert in silver sand in well-drained pots, as described the other week for Aphelexis, and carefully cover with a bell-glass. As extremes of temperature and of dryness and moisture are to be avoided, it will be found of great advantage to have a glass case inside of a propagating-house, beneath which the propagating-glasses with their pots and cuttings may at first be set, and then, in three weeks, plunged in a mild bottom heat. When struck, four plants may be potted round the sides of a four-inch pot. The next spring each of these plants may have a three-inch pot, and the season following a four or five-inch pot. I presume that it is such plants that our correspondent has obtained; and in general it is by far the most economical to purchase such plants from nurserymen who make propagating a principal feature in their trade.

The best Soil for Epacris is good heath mould lightened with silver sand. For small plants in the smallest pots, the soil should be rather fine. As the pots and the plants get larger the soil should be rougher, so that for a seven or eight-inch pot there may be many pieces as large as fair-sized marbles,

and some of the very dusty parts of the peat should be excluded before the silver sand is added. For such plants as require from an eight to a ten-inch pot, the soil should be three parts of good fibry sandy peat, and one part should consist of equal parts of silver sand, rough pieces of charcoal without dust, and broken pieces of pots also without dust. In such sizes there may be pieces of soil as large as walnuts; in six-inch pots, pieces as large as Mazagan beans; whilst in smaller sizes, the rough pieces should be little larger than peas.

Watering.—As a general rule pure rain water is the best, and the plants should never be very dry. The quantity of water required will be regulated by the weather and the state of the plant. When resting after pruning, little moisture will be required; and a rather-close atmosphere, and a skiff from the syringe overhead, morning, noon, and night, will be better than much watering at the root. Most water will be needed when the plant is making its new wood, and when it is in bloom. At these periods weak clear manure water, made from cowdung, sweet, and from twelve to eighteen months old, will be an advantage. No artificial manure should be trusted unless very weak—as one ounce of guano to at least six gallons of water.

Pruning.—This should be done as soon as the plants have finished, or have nearly finished, flowering. Take care that the plants are not extra-watered beforehand. The mode of pruning depends on circumstances, and what is chiefly wanted. Bear in mind that in no case, except very young plants, will they bear the wood to be cut that is older than one season's growth. A clever young fellow once did me out of a good collection in a few minutes by using his knife on well-established plants as if they had been so many willow stools. It is safest to confine the pruning to the shoots of last season's growth. In the case of our correspondent, who wishes large specimens as soon as possible, I would, as a rule, prune back these shoots to from 4 to 8 inches from their base, put a string round the rim of the pot, and with threads bend these shoots to it, so as to cause them to break somewhat regularly all over. This will secure a plant well stored next season with a great many flowering-shoots; but there will be few shoots covered with flowers from 12 to 20 inches in length. To secure these fine long shoots of bloom, the bulk of the young shoots now should be cut back when done flowering to 2 or 3 inches in length. In fact, for this purpose I have often treated them as willow stools—never touching the old wood, however, as my man did unmercifully, but cutting-in the young wood pretty closely every season. Something of the first plan is the best for symmetrical specimens. As already hinted, the plants after pruning should have a rest for a fortnight or so—that is, should not be excited by extra heat or moisture.

Time of Repotting.—The best time is when the new shoots are 2 or 3 inches in length, after pruning. Care must be taken that the roots are moist previously, and the plants should be kept close and be sprinkled overhead, and shaded from bright sunshine until the roots and tops are progressing freely, when more air and light should be admitted by degrees.

General Treatment and Position.—In winter the plants should occupy an airy position in the greenhouse, which should seldom be below 40° at night, and seldom above 50°, with a rise from sunshine of from 10° to 15°. Water to be given according to weather. Frosty air to be kept from beating directly on the plants. After pruning set the plants together, and be careful not to overwater. In a fortnight, if they can be kept closer and warmer in the house, it will cause them to break more freely; if not, taking them to a house or pit where the heat would range from 50° to 65°, would be all in their favour, syringing the stems several times a-day to encourage them to break freely. Examine the drainage, and top-dress or repot as stated above. Keep the plants in a similar temperature, shading from brightest sunshine until the shoots are growing freely. Remove the plants then to a cold pit where more air can be given to them. Keep them there, if possible, all the summer under clean glass, with plenty of air back and front. In September and the first half of October leave the sashes off entirely in fine sunny weather; but if wet is anticipated, place the glass on with air on back and front. This will ripen the young shoots and cause them to show bloom at almost every joint along them, except the soft younger points. House in good time in October. If not convenient to give the plants the shelter of a cold pit in summer and autumn, the pots should be protected from the sun, so that the fine hair roots are not injured.

Of Insects and Diseases there are few that trouble the *Epacris*. The worst insect to eradicate is the white scale. If

the plants are large it is hardly worth while attempting to cure them. I once cleaned a fine large plant, much infested, by dipping it wholly in a thin paint of clay made with weak soap water. The plant was set in the shade in a close shed, and the clay was allowed to dry on the plant for four or five days; and then, when the fingers and some brushes were run through the branches, the clay and insects came away together. The plant was then well swinged in a pond of clear water, and afterwards showed little trace of the doctoring and grew well. Smaller plants might also be tried in a weak solution of glue water, or size or gum may be used. The water, if just a little sticky, shuts up the insect from atmospheric air; and it would appear that few insects can stand this so long as plants can. Few plants when growing freely can stand such treatment above forty or fifty hours.

R. FISH.

TANGERIN ORANGES.

ALLOW me to correct your report on the Oranges placed before the Fruit Committee at Kensington on the 9th ult. They were, it is true, sent by me; but, as I stated in my letter to the Secretary, from J. Stoveld, Esq., of Stedham Hall, near Midhurst.

His mode of cultivation has been the past season such a perfect success, that a few words as to the *modus operandi* may not be unacceptable to your readers.

The trees, some four or five years old, were wintered in a greenhouse with Camellias and other plants, and removed in March to a pinery, the pots being plunged in warm tan. They bloomed in April, and set a large crop of fruit. As the months of June and July were so wet and cold it was thought proper to allow them to remain in the pinery all the summer. From their first entrance into this house the trees were syringed regularly, but only on the stems and lower branches, so as to avoid wetting the blossoms, while they were in bloom. Under this treatment the crop was most abundant, so as to weigh down the branches of the trees. The fruit commenced to ripen in September, and continued to do so all through October and November.

They were larger than those usually imported, and being suffered to ripen on the trees, they were so full of juice as to make their rinds crack; their richness of flavour and fine aroma were most remarkable. In the hot summers of 1857-8-9 these Oranges ripened well in orchard-houses, but not so in 1860 and last summer; so that to cultivate them in high perfection, in ordinary seasons the trees, after being wintered in a greenhouse, should be placed in a pinery or vinery where Grapes are forced, or in any other house where forcing is carried on.—THOS. RIVERS.

CALCEOLARIA LEAVES TURNED BLACK.

CAN you tell me the cause of all my young *Calceolaria* seedling plants being affected in a manner that destroys the outside leaves by turning them black, so that there is little left besides the stem? My gardener changed the little yacht stove I had in the greenhouse to obviate frost for a larger and more close one, as he thought the leakage of the former affected his plants. Can it be the heated metal of the present stove? Two other remarks I made to him about the seedlings before this defect was observed—viz., that he watered too frequently, and pinched out the centres too early, having done this with both *Calceolarias* and *Cinerarias* fully six weeks ago.—THOS. PEARSON.

[The leaves were so dried-up before we received them, that we could scarcely make out whether the effect was produced by air burnt by an iron stove or by thrips. We think that very likely both had an influence in making them leafless. If you have read "Doings of the Last Week," you would see that Mr. Fish objects to fire heat altogether, if it can be avoided, for *Calceolarias*; and also you would find that, provided moisture and coolness be secured, they can hardly go wrong, if frost be excluded. Whenever airiness, coolness, and moisture are neglected, thrips is almost sure to seize the plants. If on examination you find your plants are much occupied with that jumping insect, the best thing you can do in their present stripped state would be to throw them away. If, however, the stems are strong, we would place all the plants close together and smoke them with the best shag tobacco; the second day afterwards place the hand over the surface of the pot reversed, and swing the head of the plant through a pail of sulphur water, or of size water, as recommended

to-day for Azaleas affected with thrips, and in a day afterwards syringe with clean water, the pot being laid on its broadside; and when the plant as respects the foliage is dry, remove a little of the surface soil, top-dress with fresh, and set the plants standing on damp moss, at the part of the house farthest from the iron stove. Here let us remark, that in using fire in these stoves, it is important that the fire should be longer continued, in preference to ever letting the iron approach red hot, as that makes sad havoc with the air enclosed. The fireplace in all iron stoves should be at least 3 or 4 inches from the surrounding case, and it is best that the fireplace be of brick.

We do not like to give an opinion about disputed points between gardeners and their employers. As respects watering, we incline to think that the gardener was right, and stopping is also a matter of taste and convenience. Where there is plenty of room, herbaceous Calceolarias and Cinerarias may be grown without stopping at all; as, if repotted as soon as the roots touch the sides of the pot, and plenty of air is given, the plants will become bushy without any stopping at all. Our border Calceolarias last season were never stopped, and no plants could have been more bushy, or flowered better; but before planting-out they were kept cool.]

CALLICARPA AMERICANA.

THIS is a native shrub found from Virginia southward but hardy in Ohio. It is very beautiful, bearing crowded small violet-coloured berries called French Mulberries by some, though not a Mulberry at all.

This, though a southern plant, is sufficiently hardy. As it blooms and fruits on the young new wood, a little winter-killing of the extreme twigs is no injury, and may be followed in the spring by the knife or shears to the manifest improvement of the appearance of this ornamental shrub.—(*Prairie Farmer*.)

[This plant is usually found in nurserymen's catalogues as a greenhouse plant under the name of *Callicarpa purpurea*. Have any of our readers tried it out of doors as a hardy plant, and, if so, will they oblige us by stating the result? It is recorded that when the plant was first introduced it was treated as a hardy plant and was destroyed by the severe frost of 1740.—EDS. J. of H.]

LESSONS LEARNED LAST YEAR.

IN reply to Edward Ollis in No. 91, I beg to say with respect to Little Dot that the stock is very small; but owing to circumstances over which I have no control, it will be parted with. And there are a few dozens of two-year-old plants; and he may venture to include them in his next spring's arrangement so far as the cost may be concerned, which will be low; but the particulars will very shortly be made known through the advertising columns of the Journal.

There has been a very remarkable omission by your correspondents—an account of their success in the floral department during the past summer. No one seems to have hit upon any good move worth recording. That the season was unfavourable for producing a grand display is generally admitted, so that most people have had just cause for being dissatisfied and keeping silent; still there have been local circumstances favourable to some plants, and even the success of one or two good and useful kinds for the summer decoration will be worth making a note of.

Some year or two ago much discussion took place respecting Calceolarias in general, and the yellow in particular. It failed very often, and spoiled the best-made arrangement. Either in the mass or in the ribbon a gap here and there was to be seen; and unless there was a good reserve kept on hand that gap would be seen to the end of the season. It was found that the yellow Calceolaria was too useful a flower to be dispensed with: hence the anxiety about the sudden failures, and the many suggestions as remedies. But who ever saw the Calceolaria do better than during the summer of 1862? I use it largely, as it is easily struck and as easily kept through the winter; and with the experience of the past summer I think it as easy to manage through the flowering season, because to do so we have only to look back to the state of the weather during the six months the Calceolaria is supposed to be planted out. From the 1st of May to the last of October there was more than an average of 3 inches of rain for each month, and pretty evenly

distributed, so that the soil could never have been thoroughly dry; at no time during the summer did the thermometer rise to 70° in the shade, and I have one of Negretti's patent maximum ones; and I have only had occasion to replace one plant, and that from an accident. Notwithstanding much rain and so low a temperature I frequently gave them liquid manure when it was raining, and nothing could have been more successful: therefore it may be presumed that the Calceolaria requires a large supply of moisture and a cool atmosphere, which, if not naturally afforded, must be artificially made.

On the other hand, I had not a solitary Balsam that I would take the trouble to plant out. *Petunias* all went to green. *Verbenas* made no progress till the latter part of the summer. *Asters* and *Marigolds* (French), were very good; *Dahlias* but middling.

My most telling bed was in an out-of-the-way piece of ground near a part of the dwelling-house. The back row was *Dahlias*; then a row of *Delphiniums* a foot apart. As soon as these had done blooming they were cut down, and a French Aster in bloom planted between each two; then two rows of *Calceolaria Gem*; then one row of yellow *Calceolaria*; then a row of variegated Mint, which kept up the *Calceolarias* nicely; then a row of *Prince of Orange Calceolaria*; next, *Scarlet Geranium*, and, although they were two-year-old plants, they became so coarse I was obliged to take them away and substitute the only plants I had—*Ageratum mexicanum*. The next row was a row of two-year-old plants of *Little Dot*. The next and outside row was *Lobelia speciosa*. That, too, grew so strong that it almost smothered *Little Dot*, and I was obliged to remove it also and substitute *Portulacas* in three-inch pots; but I am fully convinced that the original plan or arrangement would have been better if I had had a *Scarlet Geranium* with the same properties as *Little Dot*, and, if there must be an edging at all to *Little Dot*, it must be very dwarf indeed, and I think a variegated one.

Now, looking at the above bed from a distance, there were only the yellow, the variegated, and the rose to be seen distinctly in lines. And although at a distance and at a closer view it was decidedly the best display we had, I do not mean to present it as a guide to any one else; but it has proved that *Little Dot* is highly adapted, and can be depended upon even in ground too strong for any *Scarlet Geranium*, for ribbons, or for an edging, and it can be planted out at once almost to touch each other. I have proved it under a Chestnut tree, where no sun at all touched it, and no rain but what came through the tree; it is easily propagated, and it will stand more frost and other hard treatment than any other *Geranium* I have. For vases no plant could be more suitable.—THE DOCTOR'S BOX.

CELERY CULTURE.

I FIND from THE JOURNAL OF HORTICULTURE that some of its readers have been disappointed in raising Celery this season; and as I have been very successful, I will detail the way in which mine was raised.

The seed was sown thinly, using potting soil for the purpose. Either a pot or box may be used. An eight-inch pot will raise several dozen plants, and there is no use in raising more of them than are required. Place the pot or pots upon a very slight hotbed, and after the plants are up give plenty of air until they are strong enough to be pricked-off. When doing so be sure to take the very best plants and none with fewer than four leaf-stalks, as those with fewer will not make good plants. Be very careful to avoid those which have any rust upon the roots, as I have frequently found that upon seedlings of Celery when pricking-out, and if kept they will get worse. After pricking-out, the plants should be carefully shaded in sunny days and not allowed to stop growing freely, as I believe any check to their growth is very injurious to them. Free-growing healthy plants are never attacked by disease in my experience. After the plants are growing freely, give plenty of water.

I do not make the trench deep, but rather allow additional room betwixt the trenches to afford earth to supply the necessary earthing-up, and am careful to take away all decayed leaves before that is done, which should be upon a dry day and when the plants are growing freely—at least once a-week. This I believe to be one of the main preventives of the stalks decaying. I also tie the plants together with strings of old matting, which prevents the wind from breaking the tops. If the soil is coarse, a little leaf mould may be placed next the neck of the plant,

and the hand used to put the soil close to this part previously to earthing-up.

I also use very rotten dung, for I believe rank manure is very unfit for growing Celery.

I prefer any of the Red sorts to any of the White. The latter are oftener hollow and stringy.—JAMES REID.

METEOROLOGICAL NOTES, 1862.

LINTON PARK, KENT.

THE following table represents in the two first columns the highest and lowest range of the thermometer each month; the highest and lowest range of barometer; the number of days in which the wind was in each of the eight principal directions indicated, taken at noon each day; the rainfall each month, with the number of days on which it fell; also the number of frosty days; and compared with the summary of these is the record of past years, as under:—

	Thermometer.	Barometer.	Wind.										Rain.	Frost.
			Number of Days in each Month.											

The year that is past has been more remarkable for the mildness of the winter than for the heat of the summer. The number of days' frost is much below the average, while the rainy days recorded are much above it, the rainfall being above the average; the greatest fall on any one day was October 18th, .91 inch, while on the two following days 1.01 inch fell, making nearly 2 inches of rain in three consecutive days. The barometer has varied less than on most years; 30.28, on the 8th of February, is the highest range I have, and 28.82, on the 28th of the same month, is the lowest. The variation of the thermometer is also, perhaps, less than that of most years; and it is somewhat remarkable that the hottest day by 7° was May 6th, thermometer 86°. The coldest night, that preceding the 9th of February, was 16°. With regard to the prevailing winds, the above table shows a falling-off in those from the N.E., while those from the S., and also N., show an increase. The prevailing winds of the year were S.W., W., and N., counting 245 days; leaving only 120 for the other directions.

The principal features of the year may be summed-up monthly somewhat thus—viz.,

January.—Frost in the middle of the month, otherwise mild, with scarcely any snow; but the hazy rain kept the ground wet and dirty.

February.—Mild, no heavy rain, and less wind than usual.

March.—A wet month, with less wind and frost than usual.

April.—First week wet, afterwards fine and favourable; last week very warm. Cuckoo heard on 21st.

May.—First week very warm, the 6th extremely hot; the latter part of the month more dull, and less warm; nevertheless, at the end of May everything seemed forward, and promising an early season.

June.—Dull, cold, wet, and unfavourable, retarding vegetation, while the rain injured the hay crop.

July.—Not remarkable. The latter end of the month finer than the beginning.

August.—Some useful rains about the middle, afterwards fine and seasonable.

September.—The beginning and end of the month wet; the middle fine; in other respects not remarkable.

October.—First week fine, afterwards wet, with some high winds; very little frost.

November.—Not remarkable any way.

December.—Unusually mild, and the wind so high and dry on the 21st as to cause the dust to fly—an unusual thing on the shortest day. Very little frost for December.

On the character of the season in regard to the agricultural crops, it is not my purpose here to enter, further than that the harvest was later than usual, especially in late places. The wet weather setting in about the time the corn was ready to cut, and continuing throughout October, retarded that operation much. The harvest, however, in more favoured places was tolerably well got through. Of fruits and other produce I purpose saying something hereafter.—J. ROBSON.

CLEANING A GREENHOUSE FLUE.

I AM afraid my greenhouse flue is becoming stopped-up with soot, as it does not draw so well as it did formerly, nor does it give out so much heat. It has not been cleaned out since this time last year. As it would be very inconvenient, if not impossible (on account of the plants in the greenhouse) to have the flue opened and cleaned, I shall be glad if you would inform me whether I should be in danger of injuring my plants if I were to set fire to the soot in the flue, which I have no doubt I could do by putting some dry straw in the fire-hole. The flue is of brick, 9 inches by 4½, and the length from the fireplace to the chimney about 20 feet. I feel pretty confident that setting fire to the flue would so far clear it that it would work until the spring, if you think I may do so without danger of injuring the plants; I mean by the excessive heat likely to be generated by the firing of the soot in the flue.—COUNTRY CURATE.

[In such a short flue we should think you could clean it in a quiet mild day, and with only one opening, sending most of the soot to the chimney bottom, and to the furnace. It is great waste and dangerous to use a dirty flue. If done carefully the flue might be swept without dusting the plants in the least. If you were obliged to take any soot out in the house, the hole could be covered with a bag, which would prevent any scattering. Your flue being 4½ inches thick, would stand being set fire to better than a thinner flue; but we would not at all advise you to do so—not because, as you imagine, you would have too much heat from the burning soot, but because there would be such a likelihood of explosions that your flue would never be sound afterwards.]

DESTROYING CRICKETS.

A CORRESPONDENT lately inquired how to destroy them, and I recommended thin slices of bread and butter with arsenic placed on them, and then the buttered arsenic-sides placed together. I knew that once my friend Mr. Fraser, of Luton Hoo, was much troubled with them, and the plan he adopted was, he thinks, more successful. Arsenic was mixed in little balls of fat, made like good-sized pills, and these were dropped into the dry warm places where crickets were known to frequent most before starting on their depredations. At night, when the light of a candle was as quietly and noiselessly as possible thrown upon the spot, the crickets would be seen not only devouring the pills, but also, in cannibal fashion, devouring those that were already sick and dying, and thus obtaining a double portion of the poison. If once they get a-head they will destroy almost everything tender.—R. F.

PEARS THIS WINTER.

In the last Number of your Journal, I see a notice from "E. B.," of some kinds of Pears having kept unusually well this season. Mine have, upon the whole, kept very badly; but there has been very great uncertainty in their keeping. Two months ago all my Winter Nelises grown on pyramids were quite ripe, many with spots of decay upon them, and going much faster than we could consume them, while Pears of the same sort, gathered from an east wall, were perfectly green and hard, and are now just in perfection, and showing no tendency to decay.

My Duchesse d'Angoulême were also, one quantity of them, fully ripe two months ago; while another quantity gathered from another tree (both pyramids) were quite hard, and have only been finished about a fortnight ago.

Several other varieties, Beurré Diel, Beurré d'Arenberg, Beurré Duhaime, Passe Colmar, &c., have prematurely and suddenly gone bad at the heart, and become thoroughly decayed. With a few exceptions, Pears have, moreover, with me been decidedly wanting in favour this season. In my crop of Glou Morceau, I have noticed that all those which are deformed and drawn out of shape by canker are far the best, while all the fruits which are clear and perfect are very deficient in sweetness and flavour. I have this sort both on an east and west wall, but decidedly inferior this season, and many of the largest and finest fruit are going at the heart before they are properly ripe.—C. P., *Herts.*

NEW BOOK.

The Weather Book: a Manual of Practical Meteorology. By Rear-Admiral Fitz Roy. London: Longman & Co.

(Concluded from page 789.)

AT Chapter XIII. of this valuable work we come to the practical utilisation of meteorology. "Having statistical facts, and understanding their relation to our atmosphere at any given time or succession of times, we know what is occurring around us within a certain area of several hundred miles in diameter in the air and clouds that may be above or passing near us; and, not only so, we can tell, with even more than probability, what will be the atmospheric conditions within and at any part of such an area during the next two or three days." The author then gives a brief outline of the practical system at the Board of Trade, with reference to meteorologic telegraphy.

"In treating so complicated and extensive a subject as that of our atmosphere and its movements, it is extremely difficult to combine mathematical exactness with the results of experience obtained by practical ocular observation and much reflection; but to some extent this has been effected recently, the Board of Trade having arranged telegraphic and frequent communication between widely-separated stations and a central office in London, by which a means of feeling—indeed one may say mentally seeing—successive simultaneous states of the atmosphere over the greater extent of our islands was established, and an insight into its dynamical laws has been obtained, to which each passing month has added elucidation and value.

"The first cautionary or storm-warning signals were made in February, 1861; since which time similar notices have been given as occasion needed.

"In August, 1861, the first published forecasts of weather were tried; and after another half-year had elapsed for gaining experience by varied tentative arrangements, the present system was established. Twenty-two reports are now received each morning, except Sundays, and ten each afternoon, besides five from the continent. Double forecasts, two days in advance, are published, with the full tables on which they chiefly depend, and are sent to eight daily papers, to one weekly, to Lloyd's, to the Admiralty, and to the Horse Guards, besides the Board of Trade.

"The forecasts add almost nothing to the pecuniary expense of the system, while their usefulness, practically, is said to be more and more recognised. Warnings of storms arise out of them, and, scarcely enough considered, the satisfaction of knowing that no very bad weather is imminent may be great to a person about to cross the sea. Thus their negative evidence may be actually little less valuable than the positive.

"Prophecies or predictions they are not: the term forecast is strictly applicable to such an opinion as is the result of a scientific combination and calculation, liable to be occasionally, though rarely, marred by an unexpected 'downrush' of southerly

wind, or by a rapid electrical action not yet sufficiently indicated to our extremely limited sight and feeling. We shall know more and more by degrees."

As a proof of the usefulness of these warnings or "forecasts," it is mentioned that, "At a meeting of the shareholders of the Great Western Docks at Stonehouse, Plymouth, it was stated officially that 'the deficiency in revenue is to be attributed chiefly to the absence of vessels requiring the use of the graving docks for the purpose of repairing the damages occasioned by storms and casualties at sea.'"

In order to enable the reader to judge of the basis on which rules for forecasting the weather likely to occur is founded, some explanations are given, as the method is new in its combinations, although depending on old or well-known principles. For these the work itself ought to be perused; but as many of our readers will be curious to know from what circumstances these rules are mainly deduced, we shall endeavour to point out a few of the principal.

Air-currents, we are told, sometimes flow side by side, though in opposite directions, as parallel streams for hundreds or even thousands of miles. Sometimes they are more or less superposed; occasionally, indeed frequently, crossing at various angles, sometimes so antagonistic in their angular collision as to cause those large circular eddies, or rotatory storms, called cyclones.

"Whenever a polar current prevails at any place, or is approaching, the air becomes heavier, and the barometer is high or rising. When the opposite, tropical, prevails or approaches, the mercury is low, or falls, because the air is, or is becoming, specifically lighter." The north-east and south-west are reckoned by meteorologists the "wind-poles;" and all varieties of winds may be traced to operations of the two principal currents, polar and tropical, our north-east and south-west points.

Great and important changes of weather and wind are invariably preceded, as well as accompanied by notable alterations in the state of the atmosphere. It has frequently been asked, "how much rise or fall of the glasses may foretell remarkable change, or a dangerous storm?" To which can now be replied, "Great changes or storms are usually shown by falls of the barometer exceeding half an inch, and by differences of temperature exceeding about 15°. Nearly one-tenth of an inch an hour is a fall presaging a storm or very heavy rain. The more rapidly such changes occur the more risk there is of dangerous atmospheric commotion."

The barometer often, if not usually, shows what may be expected a day or even days in advance rather than the weather of the present or next few hours. By means of telegraphic communication warning can be sent of such changes all round the coasts.

Extensive changes, showing differences of pressure above or below the mean height of the mercury in the barometer, amounting to nearly an inch, or thereabouts, are certain to be followed by marked commotion of the elements in a few days. If the fall has been sudden, or the rise very rapid, swift but brief will be the resulting elementary movement. If an extensive fall or rise take place slowly, the change in the weather will likewise be gradual, but will last longer, whether for better or for worse.

At the Board of Trade, we are informed, from thirty to forty weather telegrams are received daily (except Sundays), and forecasts or premonitions of weather are drawn up for publication in the newspapers as speedily as possible. Those received at ten A.M. are examined and sent out at eleven A.M. for publication in the second edition of the *Times*, and soon afterwards to other afternoon papers. Suppose that on a given morning the barometrical readings are nearly alike, it may be not differing more than a few hundredths of an inch from Nairn to Jersey, from Valentia to Heligoland; temperature, evaporation, nearly similar, as well as the direction and force of the wind—such statistical data would show at once a settled state of the air; and as statistical alteration must precede dynamic motion, a continuance of settled weather is probable. Under such circumstances no general change of importance can occur during a day.

Mr. Glaisher's balloon ascent on the 5th of last September is noticed. He and his companion attained a height, it is said, of more than 6 miles, and they probably exceeded 7 miles, which is higher than Deodunga, the loftiest summit of the Himalayas, about 29,000 feet—6 miles being 31,680. The last registration of the barometer, before Mr. Glaisher lost consciousness, was 10 inches, and this was in the extreme cold of 57° below freezing, and in an air so rarified that the pigeons which were liberated fell like

stones. "There was no moisture, there were no clouds, for they were far above both. They were nearer to heatless, airless, and mysterious space than ever mortal man had previously penetrated." Beds of moisture (clouds or fog) lie at various heights not exceeding about two miles.

The work is illustrated by numerous plates and diagrams; and in an appendix the storm-warning signals, now so beneficially employed, are explained, together with other matters relating to the subject of the weather. Altogether it is one of the most interesting and useful publications that have appeared in modern times.

At present forecasts of the weather are limited to some days; but they may, in a time not far distant, extend to weeks, or to the season, with nearly equal certainty.

NATIONAL AURICULA SHOW.

FOR the information of the Auricula-growers and exhibitors at the National Auricula Show to be held at York, I can state that the communications I have received are in favour of five being the minimum number of pips on a truss of edged varieties, and seven on selfs. But it must not be understood that the truss is to be reduced to that number; for where a larger truss is exhibited it will be preferred, if the properties are equal.

With regard to showing the plants in the pots in which they are grown no restrictions will be made, as it is thought necessary by some to turn them out for the convenience of travelling.

I would much rather others would give their opinions; but, whilst on this subject, I cannot refrain from saying that I think the exhibitor gains no advantage by so doing. The only object in doing it, that I can see, is to save railway carriage, which is a great object to many persons; and I think we ought to give every facility for exhibitors sending their plants to and from the Show with as little expense as possible. I certainly did object to the untidy manner in which some plants were placed on the exhibition table at the late Show, which I will take care does not occur at York.

I would strongly urge those who intend to exhibit to send me their names at once, as I am desirous to get the schedules out as soon as possible.

I have been solicited to add a class for Alpines, and it would have given me great pleasure to have complied; but not wishing to encroach upon our funds, I cannot take it upon myself to do so. As I am desirous to secure a good show, I shall be happy to give one guinea to be competed for in this class.

Having had several inquiries as to the principles fixed upon for the guidance of the Judges, I may state that *Glenney's* properties of the Auricula will be the standard, a copy of which will be forwarded to the subscribers shortly.—*JOHN DOUGLAS, Davy Gate, York.*

BEGONIAS SUFFERING FROM COLD.

I HAVE, in a conservatory which cannot be heated but by a Joyce's stove at times, some Begonias that suffer much, apparently, from the damp sea air. The temperature of the house never sinks much below 40° Fahr.—*DORSETSHIRE.*

[There are few Begonias that will keep healthy at a temperature of 40°. You will succeed in keeping most of them over the winter at from 40° to 45° if they are kept just sufficiently dry so as not to be dried-up. These would lose most of their leaves, and look unsightly; but they would bloom well, and look well in summer, as the sun gave them heat enough. To look well in winter they would require a heat of from 50° to 60°. With your temperature of 40° the best you could do would be to place the Begonias temporarily out of sight, and just keep them alive and rather dry, and they will be all right in summer.]

ESTABLISHING A ROOKERY.

I SEE in your No. 91 an inquiry from a correspondent "*GATLEY*," regarding the formation of a rookery, and I beg to forward my own experience in a similar case.

My sister obtained a nest of newly-hatched rooks from a rookery very near to the trees we wished inhabited, within the distance of three or four fields, and she had carried it carefully in sight of the old birds, which followed the cries of their young. She carried it up to the top of a very high Beech, and fixed it

firmly in the fork of the upper boughs as high as he could climb; for the tallest trees are preferred by rooks, and the Beech and Elm to other species.

The old birds brought up their little ones, and a settlement was thus formed, which remains to this day. If there should be any rookery in the neighbourhood of "*GATLEY*," it might be worth his while to bestow a little time, care, and trouble, to try this experiment.—*THE AUTHORESS OF "MY FLOWERS."*

MELON CULTURE.

You will oblige me by stating how Mr. Fish waters his Melons through drain-pipes. I had a good crop this year; but after they began just turning the leaves became blighted, and brown spots came all over the Melons. They did not all turn at once, as two or three ripened. The roots I found were cracked from the bottom to just level with the soil. I had slates all over the soil, and the plants ran over them. I grew flowers in the pit with the Melons. The soil was light common garden soil mixed with rotten manure. This last month I have had two loads of stiff marly soil mixed with some rotten manure, which I have thrown in a heap, and I soak it with the liquid manure from the stable, and will continue doing so till the spring. Am I doing right? I watered the Melons between the slates, but now I think of trying Mr. Fish's plan.—*A TWO-YEARS SUBSCRIBER.*

[The cracking of the roots was greatly owing to the richness of your soil. Leaves are apt to decay if the atmosphere is kept very warm and dry. In your case we suspect that the roots were rather dry. Your preparation of soil for next year may answer in the hands of the initiated, or of those who will take care to counteract it, but Mr. Fish says it is far too rich for him to approve. He prefers soil rather stiff than light, and with little manure in it, especially if fermenting material is used. Even when ripening the roots must not be dry; but if flavour is the chief object the atmosphere must be rather dry. This cannot be the case when the surface of the bed is always moist from syringings or waterings. When the fruit, therefore, approaches maturity no watering to speak of is given at the surface, but the soil beneath is kept rather moist by pouring water into small round drain-tiles, inserted perpendicularly in the soil at back and front of the frame, about 3 feet apart, and fitting a plug into the end of the tile.]

THE DISTRESSED LANCASHIRE WORKINGMEN BOTANISTS.

I HAVE received, since I last wrote, from two workingmen botanists at Manchester 5s.; from V.R., 10s.; from Dover, 2s.; from Mrs. H. Wood, Hoole House, Chester, £5.—*JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.*

P.S.—By a stupid mistake I put my address "36, Church Street" the other week, which has caused some little confusion. The above is the correct address.—*J. H.*

HOT-WATER PIPES *versus* FLUES.

IN describing, a few weeks ago, the gardens at Ravensworth Castle, Mr. Robson remarked on the advantages of flues over a hot-water apparatus there and at other places similarly situated as regards coal. I have looked through the succeeding Numbers of *THE JOURNAL OF HORTICULTURE*, expecting some hot-house builder or hot-water apparatus manufacturer would have remarked on the alleged advantages, and in opposition stated some of the advantages of an efficient hot-water apparatus. But, perhaps, they have been deterred from doing so by the obviousness of the advantages, and not from any delicate feeling of seeming interest in the matter.

With all due deference to Mr. Robson's better judgment, I am still of opinion that even with coal at 4s. per ton in large places, hot water is the cheaper in the end. It not only reduces the labour in attending to the fires, which is no inconsiderable item if two or three men are required for the purpose, but it also reduces the haulage; and these advantages together would, I believe, do more than cover the interest on the outlay upon an efficient economically-constructed hot-water apparatus.

I quite agree with Mr. Robson in the greater freedom from

"blacks," from a long horizontal flue than the short vertical ones usually erected over boilers; but I think that evil is counter-balanced by the perfect freedom in-doors of hot water from all noxious gases which sometimes escape from flues, and the ab-

sence of the dust and mess occasioned by opening them in plant-houses for the purpose of removing the soot, &c.

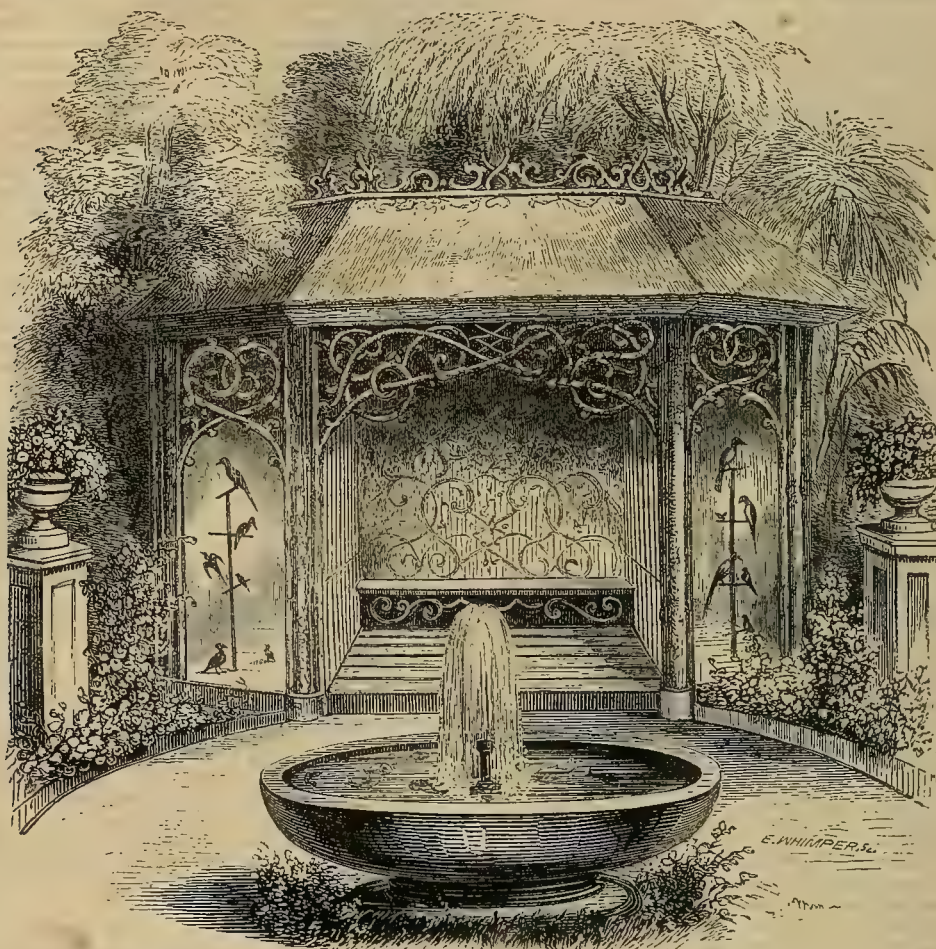
Mr. Robson, I am sure, will courteously receive my doubts of the economy of flues.—W. CRAW, *Enville*.

ALCOVE-AVIARIES AND BOWERS.

THE grand general principle of propriety in garden decorations is, that they should never be objectless; and this, with the selection of sites, which should be so felicitously chosen as to give to each structure the appearance of being in a position, as

it were, predestined for it, forms the fundamental law of the code of landscape-gardening.

The accompanying design for an alcove-aviary is intended to occupy a position not distant from the residence, and yet con-



AN ALCOVE-AVIARY.

cealed from it. It should form a point of attraction capable of inducing frequent visits, by its convenient proximity, and yet convey to the spectator an impression of agreeable surprise every time it is approached. These conditions are not difficult of fulfilment. The readiest mode would be the following:—Let us suppose a side garden-door of a country house (not the principal entrance) opening upon a small lawn enriched by geometrical flower-beds, or a rosery, through the midst of which a dry broad path leads towards the shrubbery, which is entered by a winding walk, at a given point of which, about half way through, the visitor is introduced by a sudden turn to an open space of long, oval form, running longwise in the direction of south-east to north-west. This space should be bordered with a neat but somewhat bold and massive cement coping, which would form a support of congenial character to the pedestals and vases which are intended to stand on each side of the entrance, and, at distances, all round. The entrance should be at the south-eastern end of the oval, opposite to the alcove-aviary, which would thus have a favourable aspect, securing the

early morning sun, so essential to birds, especially in a state of comparative confinement. Both the entrance and the way out should be concealed by well-designed windings.

I propose that the front and exterior sides of those portions of the structure devoted to the aviary should be of one piece of strong glass, which would enable birds to be seen without the disagreeable intervention of wirework, and at the same time form a protection from cold winds and beating rain, highly important to the healthy keeping of the birds. On the interior side of each compartment of the aviary, I would have wirework only, as open as the size of the birds might render advisable. This, with the addition of proper ventilation planned under the thatch, would admit a sufficient quantity of air, and would place the birds in more open and immediate intercourse with the visitors, snugly seated within the shade of the alcove, and watching the varying play of sunshine upon the plumage of the moving birds, or renewing the food and water of the inhabitants of the aviary, which, it is scarcely necessary to state, should be done every day at least once, but if twice so much the better. For

these purposes, it is of course necessary that a wirework door, large enough for a person to enter, should be framed into the interior wirework.

It will be seen by the design that a more decorative style of rustic-work is suggested than that usually employed—a branch of garden decoration on which I intend to offer some advice, accompanied by designs, on another occasion.

Rustic-work of this character, if found impracticable by the usual mode—that of unbarked branches judiciously interlaced—should be roughly carved in wood, and varnished with transparent but deep brown varnish; or might be modelled, and then cast in cement, or even in iron; and I wonder much that low fences, &c., have not been cast in iron in that style. The edge of the roof is surmounted by smaller rustic tracing of a similar character. This alcove-aviary should be well backed-up by thick-growing trees of considerable size, and the plantation should be of sufficient depth to prevent it being seen through, or the effect of a dark background to the structure would be destroyed, and the spell of seclusion—the great charm of the scene—would be broken.

An additional interest might be imparted to this secluded spot by the introduction of a large but excessively simple tazza, containing gold fish; into this a gently bubbling fountain should convey a continual supply of fresh water. This tazza should be almost of the dimensions of a miniature pond or basin, while its slight elevation on a low stand, as designed, would give it a novel and architectural character in keeping with the other dressings of the scene. The small fountain in the centre might be made to issue from an opening of miniature rocks, raised slightly above the level of the water, and covered with water-loving Ferns and Mosses. But the exterior of the tazza should be kept freshly cleaned or painted; for wherever animal life, in whatever form, is the object to be petted and cared for, an appearance of daily attention and perfect order and cleanliness are the most agreeable adjuncts to all arrangements for the purpose. The stand of the tazza is intended to be surrounded at some little distance with a low cement coping, within which some low-growing profusely-flowered plant is intended to grow (such as Thrift at some seasons, double Daisies at another, or annual dwarf Lobelia at another), which would partially break the formality of the coping, without destroying its symmetrical effect.

An aviary and alcove of this kind might be approached from the house by a covered path if thought advisable, in which case the entrance from such a path should be from the back, so as not to disfigure the open approach; and in that case a door in the back of the alcove should lead to the covered path, which might pass through without interference with the close shrubbery, which should effectually shroud the back of the structure.—H. N. HUMPHREYS.

On the subject of Bowers, we append the following hints and sketches supplied by another correspondent:—

It sometimes happens, when trees are cut down a few inches from the ground, that they send up shoots all round the stump. These shoots grow to a greater or less height, according to circumstances, and in some cases even attain a size little inferior to the original tree. It is difficult to prevent these shoots pushing up from a tree-stump, which thus often becomes a source of annoyance on a lawn or pleasure ground, while the labour of uprooting it is grudged. One mode of overcoming this evil, or rather of converting an object of annoyance into an



Fig. 1.—Tree-stump preparing for a Bower.

object of utility and ornament, is illustrated by the following sketches. Fig. 1 shows the stump of a tree (Ash) with the young

branches grown up round it; and fig. 2 illustrates the fashion in which these branches may be made to form an elegant canopy to one of the most natural of rustic seats—the stump of the



Fig. 2.—The same more advanced.

tree; which may, however, be provided with a soft cushion if required. The branches need simply to be tied together by means of wire; and if a few plants of Ivy and Brier, with one or two of the more choice climbing Roses are planted around the base, the whole would soon become very compact and beautiful. The wires should not be tied tightly, lest they should cut the branches in the course of time; and perhaps, for this reason, ordinary string-ties would be preferable.—DELTA.

MUST SEA-KALE BE OFTEN RENEWED?

YOUR correspondent Mr. Knight, in No. 89, page 716, says the Globe Artichoke, like Sea-kale, should never be allowed to remain in a garden after one or two years if grown for profit. If that be the case I am sadly out of the rule, for I have some Sea-kale that has been in the same bed for the last ten years, and it still proves very profitable; but then I do not force the plants too severely, nor cut from them two or three times in a season.

Sea-kale, like an animal, if hard worked and badly fed will soon be exhausted.

My Sea-kale is just coming on. Before I cover-up the plants I always let them have a drinking carouse with their friends, the liquid cans, merely to wish each many happy returns of the season. Also about June I allow them to show off their new and blooming foliage.

I think if the Sea-kale plants are properly treated they will last much longer than our friend Mr. Knight has been led to believe.—P. M.

EARLY GRAPES.

IN a letter from "J. E. F., *Knowsley Hall*," in No. 88 of this Journal, he disputes Mr. Thomson, of Dalkeith, being the first person who produced early Grapes on the 1st of January. In reply I beg to inform "J. E. F." that Mr. Thomson was the first ever reported to have shown early Grapes on the 1st of January, which he did on the 1st of January, 1861, and on the 1st of January, 1862. The only early Grapes reported to have been shown were grown by myself. There were also one or two other samples exhibited about the middle of January; and if "J. E. F.'s" Grapes were ready by the 1st of January, why did he not send them for inspection until the 10th of February, 1862?—JAMES FOWLER, *Harewood Gardens*.

PROTECT THE GLOBE ARTICHOKE.

ABOUT fifteen years ago we had a very severe winter. I was but a lad, but well remember in the garden where I was this now much-talked-of Artichoke was not protected, consequently the plants were all killed. It is true we do not very often have such severe winters, but there was in 1860-1.

I have grown them in my present situation, and probably taken more care of them than some folks, for I always protect them, and, therefore, seldom lose any; but in the year 1860 I lost several plants notwithstanding the protection.

Your correspondent, Mr. Henry Knight, in No. 89, page 716, thinks if the plants are but one or two years old they will stand the frost the better. Now, I have no faith in that; for in 1860, when I lost most plants, they were all young, and not one of the old plants that perished; but even these came up weakly, and proved of little service. They all received the same protection, which was coal ashes heaped up round them from 9 inches to a foot deep. If you will be always safe I say, as does your correspondent "J. H. M.," Protect them.—H. G., *Stroudwater, Gloucestershire.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHEREVER the soil will admit of being moved with advantage, let every vacant piece of ground be trenched or deeply dug and be left in ridges. Keep the Broccoli, Celery, and Spinach free from dead leaves. Carrots, where young ones are wanted early, prepare a slight hotbed for the purpose, cover it with leaf mould to the depth of 6 or 8 inches, in which sow the seed. A little Radish seed may be scattered on the bed at the same time, but the roots must be drawn in a young state. Cucumbers, prepare dung for the main early bed, making a small seed-bed for raising the plants. Lettuce, where there is a scarcity of autumn-sown, sow on a slight hotbed or in boxes in a forcing-house to be afterwards pricked into a frame. Sea-kale, as that which was covered first is cut, remove the pots to that portion which has hitherto had no covering, so as to keep up a succession. The dung and leaves which have been previously used will serve the purpose again if a little fresh be added.

FLOWER GARDEN.

The very common but bad practice of digging shrubberies is generally one of the principal occupations at this season. It is to be regretted that such is the case, as the operation is highly injurious to the trees and shrubs, in consequence of destroying a large portion of their most valuable roots. The digging of shrubberies for two or three years after they are planted, where there is no danger of touching the roots, is no doubt highly beneficial to the plants, but after that time nothing should be done to disturb the roots near the surface, as the health and vigour of the plants in many cases depend almost entirely on them. Where alterations are contemplated—such as making new walks, new flower-beds, or renewing the soil in old ones, these should be forwarded whenever the weather will permit. Holes for planting choice or new shrubs or trees may also be prepared, by removing the bad soil and replacing it by a compost suitable to the plants; and even when trees are planted and not growing well, the soil may be carefully removed from the roots and replaced by better material.

FRUIT GARDEN.

Proceed with pruning, and protect newly-planted trees by mulching their roots. Strawberries in pots, put a quantity of these in heat, according to the stock and demand, every fortnight. Keep them near the glass, and begin with a temperature of 45° to 50° at night, increasing it to 55° by the time they begin to truss-up. In all stages of growth the Strawberry must be well supplied with fresh air, and a damp stagnant air is certain ruin thus early, when in bloom especially.

STOVE.

The temperature of this house should not exceed 60° now by fire heat, and a fall of 10° may be allowed at night in very cold weather. Although all plants now at rest should be kept comparatively dry, they will require to be looked over occasionally to see that they do not suffer for want of water, especially those nearest the pipes or flues. Orchids may be potted, tied up to logs, or fitted into wire-baskets at a time when but little can be done out of doors, but they need not be watered or induced to grow for some time.

GREENHOUSE AND CONSERVATORY.

About 40° is a good temperature for these houses when not attached to sitting-rooms, and when only used for the purpose of wintering large specimens without plants in blossom; but where a supply of stove plants in bloom is kept up from a forcing-pit, which is necessary to every good conservatory in winter, the best

heat is 45°. Cinerarias, which are great favourites, are thirsty plants, and will require to be carefully attended to with water. If Camellias are not regularly supplied with soft but not too cold water the buds will drop; if too much is given, frequently that will cause them to drop too. Thin the flower-buds if crowded. Never give heat to Heaths as long as frost can be kept out by coverings. A few degrees of frost will never injure Cape Heaths, whereas fires are their ruin. Let the air blow upon them on all favourable occasions. So with the entire class of New Holland plants. Chrysanthemums, now done blooming, protect from severe frost. If the soil of any plant is sodden with water it should be turned out of the pot and the drainage examined, and no more to be given until it becomes dry. If a plant droops and the soil on the surface is damp, by turning the ball out of the pot it will be seen whether the whole or only a portion of the soil is wet, as sometimes when wet soil is used and fresh potted, it dries and shrinks from the sides of the pot, and when water is applied it runs down and moistens the outside without penetrating the ball.

FORCING-PIT.

The plants here now require constant attention. Keep them neatly tied-up as they grow, and once or twice a-day look over them with the water-pot. Remove them as they open, and bring in a succession. Neapolitan Violets may be brought in to force now. Forcing Roses must be looked over frequently, or the "worm i' the bud" will soon destroy the cultivator's hopes.

PITS AND FRAMES.

Keep the plants in these structures as hardy as possible by fully exposing them in mild weather. Do not give them any more water than is absolutely necessary, but when it is given all the soil in the pot should be wetted. Clear the surface of the soil from moss and weeds, remove all decaying leaves, and preserve the atmosphere in as healthy a state as possible.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

LOOKED over Broccoli, and bent a few leaves over those heading, to protect them alike from much wet and any sudden frost that may come. Took-up a few rather forward, and put them under a thatched shed; find they will keep longer thus than if planted in a pit with glass covering. Some years ago I detailed how Mr. Crockett, gardener at Raith in Fifeshire, kept Cauliflowers all the winter on the floor of a shed with a small window to the north, by merely cutting the heads when about half-grown, with a foot or so of stem, removing all the leaves, and fastening the stems firmly in light sandy soil, so that the heads did not touch each other. I can vouch for this being one of the best and easiest modes for securing a winter supply. The heads when cut were thrown into a pail of cold water for a few hours before sending them to the kitchen. I meant to do something of this kind with a bank of late Cauliflower, but was unable; for, owing to the mildness of the weather late in autumn, the whole plantation, from not being looked at for a few days, got too forward for managing this way, and was, therefore, used for common purposes. It is no use trying this, or, indeed, hardly any other method, of thus saving Broccoli and Cauliflower, except the heads are firm and not too large. I may mention, in the case of those coming on out of doors, that in addition to bending a leaf or two over the head, it is advisable to have a bundle of old hay or oat-straw, just to stick a small handful over each head in a sudden frost. Stirred the ground among young Lettuces, Cauliflowers, Cabbages, and Radishes in frames, thinning the latter also to give them room to grow. Among these a few Carrots and Lettuces were sown. Prepared what little fermenting material could be had for beds of Carrots and Potatoes; a Carrot-bed being one of the most profitable things when slightly forced that I know, and especially if left pretty thick, so that the first gatherings act in the way of thinnings. Sowed Cucumber seed in a sweet small hotbed almost wholly of leaves, with a good dusting of lime on the surface layer to settle worms and snails, sowing the seeds in large 60-pots, and then placing the small pot in the bottom of a 32-pot, and a square of glass over the latter, and a weight on the glass to prevent a mouse getting at the seeds. The glass will also permit the plants to grow into the rough leaf before shifting, and after that mice in general will not touch them. Sowed some Tom Thumb Peas about six seeds in 24-sized pots, and also some in

60's, to be again repotted, and put them in a frame to bring them on a little, so that they can be fruited in pots under protection. Swept over Mushroom-beds, having great plenty of all sizes; the chief complaint is that they are individually rather thick. In the last earthed bed, the man who manages the beds left a piece of the earthing rough and unbeaten. Altogether the earth was rather too wet, and I was a little doubtful about it, and on that account covered it with straw and hay, which drew up the damp, and were removed as soon as dampish, and dry substituted. The whole bed is now like a sheet; but the little fact I wish to chronicle is that the yard or so, with the earth left loose and unbeaten, came the first into bearing, and very strong, which the workman ascribed to the looseness of the soil, and I to the fact that that part was close to a boiler which was frequently used; however, there may be a little in both reasons. The chief object in beating these shallow beds firm, and beating the one-and-a-half to two-inch covering of earth also firm, is to secure strong short-legged Mushrooms, and for the ease with which a bed can be swept with a hair broom when from coverings or other causes the spawn would be inclined to run along the bed instead of throwing-up the Mushroomis. From what I have several times observed, however, did I want Mushrooms in a hurry—say three weeks or four weeks after spawning, I would cover with about an inch of soil, and leave it rather loose and rough. I should not expect such a bed to last long, but it would be earlier than one well beaten and deeply covered. From six to seven weeks I should expect to pass before I gathered from the latter.

FRUIT GARDEN.

Here the work has been much the same as in previous weeks. Damping the Vines in a small pit, temperature averaging 55°; putting a few hot leaves on viney-border, and the stubble that was there before over them, making about 14 inches in all. Looking over Grapes in late house, and find the Hamburgs are just getting too ripe and beginning to go here and there. West's St. Peter's and Muscats still very good and likely to keep much longer than we can let them. There is a fine idea in Mr. Thomson's book on the Vine with respect to such houses in which it is desirable to keep Grapes late, and yet have them moderately early, which, though not new to me, as I followed it out twenty-five years ago in a large house from which Grapes were cut from June to Christmas, has yet been little referred to, if at all, in any work on gardening—that is, to go over now the shoots on which the bunches are hanging, and pick out all the buds except those wanted to break next season for bearing-shoots. By this means bunches may hang on the Vines—and better there than anywhere else, so long as the house is kept dry—until the sap begins to rise, and then, when the bunches are cut, all the snags may remain until the fresh shoots from the buds left are in leaf, when all may be cleared away without bleeding or any other injury to the Vine. This will just meet the difficulty of "JUVENIS," who has some Black Grapes that he thinks he could keep until the end of February, only he must start the house by the end of February. He may prune now in the regular way all wood where there is no fruit, and disbud all the rest of the shoots, except those at the base of the shoots, or where otherwise wanted. If plants requiring much water must be put into such houses, the bunches should be put in glazed bags loosely to exclude damp; or the shoot with the bunch may be cut off, the end inserted into a Beetroot, and the bunches suspended in a dry room, as Mr. Thomson also recommends. In looking over some Peach trees in pots found two or three pretty well clustered with the black beetle, though the plants had been moderately smoked with sulphur, and the trees had been well syringed with soap water at about 170°; so it shows how hard this gentleman is to kill. The worst of it is they seem to deposit their eggs in the soil in myriads. The trees already not so treated will be well scrubbed with soap and water, and then painted with clay and sulphur and a little Gishurst. Those so done a month ago give as yet no sign of insects of any kinds, and when such painting is resorted to I think it should be done a considerable time before the buds begin to swell. Looked over Strawberries, and gave a little water when necessary. It is of little use hurrying them on in such weather unless when wanted early.

CONSERVATORY.

Removed the most of the Chrysanthemums, placed the pots in an earth-pit, covering thinly with tree leaves, where they may remain until we want the pots, when they will be turned out.

Those who want large plants next autumn should now be getting their suckers in; and the quickest way, if not for exhibiting as single plants, is to put three suckers in a pot. Filled-up with Geraniums, Calceolarias, Cinerarias, and formed edgings of Variegated Geraniums. All hardwooded plants should now have plenty of air, but if very moist or frosty it should not beat on them directly. In watering, great care should be taken not to overwater, and, what is of more consequence, not to pour water on the collar of the plant, but rather near the sides of the pot, allowing the water to flood the pot all over. The pouring the water on the stem, so as to make a depression there, more than anything causes gangrene in such stems, and sends many a plant to its last resting-place in the rubbish-heap that otherwise might have lived and been beautiful for years. Plants, taken from forcing-pits and houses—as bulbs, Roses, Diehytras, shrubs, &c.—should be hardened with more air and a cool standing-place before being taken to a greenhouse or a conservatory.

PITS AND FRAMES.

Examined all these again in this dull weather to remove all trace of damped leaves, which so soon taint the air at this season; and when the soil in cutting-boxes was at all damp, not only stirred the surface with a stick, but threw a little very dry soil over the surface. Of course small plants standing thickly together will require more looking after than those that have a little pot each to themselves. I am now getting soil nicely dried over furnaces and in sheds to mix with what is already dry enough in stacks for potting-off great numbers of such things as Variegated Geraniums into the smallest pots, which by the time the roots have filled the pots will be again emptied; the plants going into beds or boxes, to be protected when necessary until the third week in May. The great difficulty now will be to find room for and get forward the numbers that will be required. A little carelessness about the new year, either as respects damp, watering, or insects, will often render abortive all the care of young stock since September. Many fine batches of Verbenas last year on Christmas-day could hardly be said to see the 1st of February. Thrips and other evils did for them as soon as the sun gained a little strength.—R. F.

TO CORRESPONDENTS.

** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

COCOA-NUT REFUSE (*A Regular Subscriber*).—The dust of the sample you sent is the portion used in forming a compost, or as a manure. The fibres must all be taken away, but they would do instead of moss for covering the drainage of your pots, and for the surface of Strawberry-beds.

LYME (*An Ignoramus*).—It absorbs carbonic acid gas from the air if long exposed to it, and combining with the acid thus absorbed is converted into chalk, or carbonate of lime. In very few instances can lime be of use in garden soils. It may be mixed with advantage with peat or other soils overcharged with vegetable remains.

AZALEA LEAVES FALLING (*Rebecca*).—It is as natural for the Azalea, unless kept extra warm in winter, to shed a few of its leaves, as it is for an Oak or a Beech to cast its leaves. This interferes little with the beauty of the plant at flowering time, as, with the expanding of the flower-buds, fresh foliage also comes. Your leaves have, however, something more than age to make them discoloured, as, though we found no thrips, we found their signs in plenty. If the plants are large, the best remedy is to smoke them with shag tobacco two or three times, at an interval of three or four days; keep them rather shaded, and take the plants individually outside; lay each upon a cloth on its broadside, and syringe thoroughly round and round with clear water at a temperature of 120°. Let as little of the syringing as possible touch the soil in the pot. If the plants are small, the most effectual mode would be to dip the head of the plant in size or gum water, just strong enough when cool to show a little adhesiveness between the thumb and finger. Keep in the shade two or three days, then draw the fingers rapidly through the leaves and shoots, and syringe thoroughly with water at 130°.

BOOKS ON BOTANY (*Subscriber at Wigan*).—Henfrey's "Rudiments of Botany," and Smith's "Introduction to Botany," edited by Macgillivray.

PLANTS FOR BACK OF A CONSERVATORY (T. B. C.).—As you seem to have quite enough of Vines in front, the best thing you could do with the back wall would be to plant it with Camellias and Oranges. Some years ago we described how such a wall was beautifully clothed in a vinery and Peach-house at Tingirth. If you planted Vines at the back and trained-down, there would be no doubt of their succeeding beneath the glass; but with the other Vines, and the stage in the centre, neither they nor anything else would do any good against the back wall itself. With that stage, even Oranges and Camellias would thrive only in proportion as the Vines were kept pretty close to the rafters.

PEACH TREES IN BAD ORDER (W. Nowlan).—We fear your trees, which you say have not made more than 2 or 3 inches of wood the past season, are past all remedy, and if so, removing them and planting others in fresh maiden loam is the best thing to do; but if they are young trees, and not otherwise diseased or deformed, the free and judicious use of the knife may restore them, taking care to leave what young wood you do retain at its full length. If, however, these short shoots have not ripened well, there must be something wrong with the border, and if it want draining let that be done at once. Report to us the result, and attend to some other instructions that will be given from time to time on the Peach and other trees.

SCARLET GERANIUMS IN BOXES (A. P. S.).—If you have space at command in spring, it would certainly be better to pot these singly in small pots; but, as generally happens, every inch of glass is full to overflowing at that time, and it is hopeless to expect a pot for every plant. Mr. Fish has, on former occasions, explained how he deals with them, and Mr. Robson has also promised to do so. The latter, to whom we have referred your inquiry about putting the cuttings into the boxes at once, instead of first striking them in the open ground, says there is no particular disadvantage either way; but he prefers taking-up and replanting, as greater regularity can be given to the mass in the box, as by having them put into the box at first, the loss of one or two cuttings in a particular place causes a gap. Mr. Robson says he often enough keeps Variegated Alyssum, Lobelia, Tropæolum, and other plants in boxes; but for the spring-forcing of these in hotbeds broad pans are better, as they suffer less by being plunged in the sawdust or other damp material, otherwise the boxes are quite as good and more convenient in handling, &c. Verbenas are better kept in winter in larger pots, as the spring growth is of most consequence in them.

WHITE SCALE ON PINE APPLES (J. B.).—Your dusting the roots of Pine-Apple plants with soot, will not kill the white scale upon them. Washing the whole plant, roots and altogether, with soap water holding a little size in solution, and at a temperature of about 140°, letting the plants drain, and in a day or two swinging them through clean water at about 120°, would be more effectual. The best plan of all would be to have a bed made from 30 to 36 inches deep of fresh horse-droppings; make a wicker bed over it, on that place all the Pine plants, and shut-up close for forty-eight hours if the atmospheric heat is not above 100°.

THRIPS ON CUCUMBER PLANTS (E. C. Q.).—If the plants are in a house, that you can examine the under side of the leaves, there is nothing so effectual as the Weaver remedy—that is, "Catch and kill them;" thus, have a basin, with a little water, and a small sponge wet, which dab on every jumper you see. We prefer doing it with the finger ourselves. You can use syringing very little at this season. Next to the above, the best remedy is smoking two nights running with the best shag tobacco. If that does not settle them, break and bruise a bushel of laurel leaves, and spread them out in the place; and if that does not do, smoke again. Be sure the smoke is cool. The mischief is that, if you have allowed the thrips to get a-head, you may kill all alive in a couple of smokings, and in a few days you will have fresh generations of them to tease you. If taken in time, there is nothing like a quick eye and a nimble finger.

BURNING SULPHUR IN A VINERY (A. Kentish Amateur).—Of course you do not mean to burn sulphur in your vinery with plants in it, to kill thrips and red spider, because it would kill every green plant. If the Vine wood is well ripened, and you took every other plant out of the house, you might then burn half a pound of sulphur mixed with sawdust in such a house, doing it before dark in the evening, and keeping the house shut the following day if dull, but giving air if sunny; then scrub the house, and do as detailed in "Doings of the Last Week" a fortnight ago. A little care and trouble now may save you much annoyance in summer. The *Tradescantia zebrina* has white bars along the purplish-like leaf.

HEATING A GREENHOUSE AND FRAMES (S. Taylor).—There is nothing to prevent your plan answering, only when you work both greenhouse and frames, it will be necessary to regulate the draught with the damper below the coil, as the heat will be more apt to ascend there than pass along the flue. A little regulating will make that all right. If your furnace-bars could be sunk a little more—say 6 or 8 inches, it would be as well; but as they are you will manage.

BOUQUET FRAMES.—W. H. M. asks, "Is there any place in London where wire frames for making hand-bouquets, as described in No. 662, Vol. XXVI., page 172, can be bought?" Can any of our readers give the desired information?

FORCING PELARGONIUMS (Hortus).—*Alba multiflora*, Gauntlet, Crimson King, Dennis's Alma, and Blancheffeur will answer your purpose for early spring flowers.

CEMENT INSTEAD OF PUTTY (Idem).—Portland cement instead of putty, for glazing an old, rickety, leaky greenhouse, and with waterlogged sash-bars, is a very odd idea and a very unlikely thing to answer; but as we have never tried it, and never heard of such a thing, we would recommend you to try the original idea yourself, and let the world know how it answers. But we can confirm your apprehension, and say from experience that paint and putty laid on wood that is green, damp, or wet, is a sure method to destroy such woodwork.

RAIN WATER (Inquirer).—If the thatched shed is very old, the water will be apt to become thick and smell disagreeably; but you could remedy this by causing it to pass first through a small barrel with a lot of charcoal and gravel in it. There will be no danger from that source of red spider, &c.

TOBACCO REQUIRED FOR FUMIGATING (Idem).—For a house 20 feet by 2 feet, a quarter of a pound of shag tobacco would be enough at a time, urned slowly, and the smoke emitted cool by passing through a covering of damp moss.

COTTAGE GARDENERS' DICTIONARY (M. A.).—It contains both the botanical and English names of plants.

CHRYSANTHEMUMS FOR EXHIBITION (Young Gardener).—You want to exhibit next Martinmas, without knowing when to make the cuttings—on the first of the new year; and then you want to know the best twenty-four kinds for showing. There are hardly twelve kinds of good habit to make specimens of that would carry a prize in these days.

ICE-KEEPING (An Eleven-years Subscriber).—We think you have overdone the ventilating. If twenty loads fill the place, the ice-well must be small, and extra care requisite. The water at the bottom, if it did stay there would melt the ice if the vapour arising from it rose up. The ventilation has been extreme. We would have kept the surface of the ice covered, and had a six-inch opening in the door, and a three-inch opening in the dome. Mr. Fish uses no straw when he does not ventilate. If he ventilates moderately he prefers the surface of the ice to be covered with straw.

PROTECTION FOR FRUIT TREES (Museum).—Thin tiffany or Nottingham netting still thinner is the best protection for fruit trees yet out, where the covering is to remain night and day, and where the frosts in general are not severe. Neither of them will be sufficient if the blossom should encounter a frost of 10° or so. Their chief value is, that through them the openings are small, and the trees are kept dry, rains trickling down instead of going through them. Numerous temporary expedients may be resorted to; but the most lasting and every way the best means yet out, if labour is not grudged, are coverings of strong calico sheeting, put on so as to be easily moved by pulleys or rings. These should be put on as soon as the buds begin to swell, kept on on sunny days to retard the blossom, and removed on dull cold days for the same purpose; but taken off after the blossoms open in fine mild days, and replaced at night. We have known such covers put away dry, last a great many years, and there is nothing so good yet that we know of. The first expense is the only objection, especially at present, but even now they would be cheaper in the end than most of the things so highly recommended.

GISHURST AND OTHER INSECT-DESTROYING COMPOUNDS (Idem).—We believe that Gishurst compound is good judiciously used, and so are Farmer's, &c., but no preparation will work such wonders as the advertisements generally state. A little allowance must be made in these matters for the zeal and enthusiasm of the inventor, and the result often is, that after each in turn being a great favourite for a time, the gardener at last often turns back to old-fashioned methods, which on the whole he finds quite as efficacious. Soap and sulphur, and something of the nature of tobacco, are the chief materials in most of these wash mixtures, and it is often a great advantage to have them in a concentrated form ready for immediate use.

NAME OF FERN (A Constant Reader).—It is *Pteris serrulata*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

PAST AND FUTURE.

OUR task is a sort of "Montagne Russe." The impetus derived from the descent of 1862 should carry us up the ascent of 1863. We are thankful it is so, and that on our first appearance in the new year we can hail our friends cheerily, thanking them for that support which has made our task an easy one, and which has given a charm to our daily pursuit. We are glad to avow our grateful sense of the mercy that has enabled us to pen another address to our many readers.

The year that has just closed has been a prosperous and pleasant one for those concerned in the pursuit of which we treat. The "happy medium" has been its characteristic. We have had no "sensation headings" of success or failure. We have kept on the even tenor of our way because things have been smooth with us and our pursuits. While we are very thankful for it, we can but feel what a damper it puts on verbosity. "Thank you" will express the gratitude of twelve months. The slightest complaint will cover sheets of paper, or feed eloquence for an hour. We are almost disposed to wish we had a little grievance. We know with what feelings we laid down the "History of England" when, at the conclusion of one of the chapters in the reign of George III., we read—"England had no peace at home, and little glory abroad." We knit our brows and sat moodily down in an easy chair, and we brooded from daylight to dusk, and from dusk to dark, and still thought "no peace and little glory." If we had read "peace and glory," we should have had little or no interest in it. Only imagine the difference between lecturing the labourer on the blessings of his position, on 9s. per week wherewith to keep a wife and seven children, one deaf and dumb, and two under three years of age; and the poor "ticket-of-leave" who has yet three to serve of the eighteen months which will entitle him to liberty, although sentenced to ten years penal servitude!

What a dull audience while we explained to the labourers the advantages of their position and the luxuries within their reach! What startling attention from the poor convicts while we told them a large part of the country sympathised with them—that it was enough to deprive them of liberty, without serving their mutton so cold that the fat swam on the gravy—and that all society wanted was to reclaim, not to punish them!!

Reports and reviews are like portraits. The even line of beauty is hard to catch, and the likeness is difficult; but in a face with a marked feature—a nose like a knocker for instance, the artist has something to lay hold of.

Revenons à nos Dorkings. We have not to note any remarkable change in weight. They are nearly as large as they can be, they have been shown in better condition and feather than at any previous time, and they have held the position gained years ago by their own merits.

Cochin-Chinas have decidedly improved so far as the Buffs are concerned. The Whites hardly remain where they were; and those rank imposters, the Blacks, have disappeared.

Spanish have not held their own in 1862. When Mr. Davies gave them up, Mr. Rake took his place. He has not shown this year, and he is missed. Who will come to the rescue?

Hamburgs have been most excellent except the Silver-pencilled. There is no reason why these latter should fall off because Mr. Archer proved they might be produced perfect in every particular.

Polands are improving in every way, and we have seen birds this year equal to anything we ever saw.

It is needless to eulogise the Game—they are always perfect. In this breed Mr. Archer has done as he did in the Pencilled Hamburgs. He is always successful. The same may be said of many other exhibitors in these classes, the Hon. W. W. Vernon for instance; and it goes far to prove, that spite of all "wise saws" to the contrary, mortals may command success.

Brahma Pootras are appreciated, and it is only here and there a caviller can be found. We must rank them with those who believe that donkeys are immortal, and that post boys never die. Not only are the merits of these birds admitted, but their points and plumage are so equally. The beauty, uniformity, and numbers of their classes will prove it.

Malays do not grow in numbers; they are perfect in quality, but there seems a limit to their entries.

Bantams are what they always were—favourites with the public. We suppose on the same principle, that if two boys of unequal size are fighting, nine out of ten side with the smaller. The Game Bantams are becoming one of the large classes. The Blacks and Whites have their defined points. The Sebrights do not increase in numbers, but they have been perfect in size, carriage and feather.

Geese are still onwards—a truly marvellous pen at Birmingham, three white birds weighing $76\frac{1}{2}$ lbs. Geese of 20 lbs. are common, and Mr. Fowler has a habit of showing three Grey birds that weigh 73 lbs.

Aylesbury Ducks hold themselves excluded if they do not weigh 7 lbs. each, and the Rouen tread on their heels. This latter class is marvellously increased, and bids fair to be the largest of all Duck classes. The birds shown are also perfect in colour and bill. The experiment of a class for Black Ducks has proved itself a success.

Turkeys remain excellent in weight, but they do not increase in entries.

We have to notice the advent of a new breed in numbers that, with a small increase, will demand a separate class. We allude to the Crève Cœurs. Mr. Wakefield, of Dorking notoriety, has been very successful in this class. Report speaks highly of them as table fowls. The Black Hamburgs were also strong in numbers and quality at Birmingham.

Shows have been numerous and well attended. Sales have, in many instances, been very large. Exhibitions are on the increase in Scotland, and capital birds are shown.

As a market commodity, and as an article of food, poultry has been unusually scarce and dear throughout the year. We still lack statistics on the subject. They would startle the most supine. During the war at the beginning of this century, a meeting of coach-proprietors and of those who horsed coaches, was held at Stratford, to consider the price of oats. Among those who were summoned came a stranger. Who was he? He modestly said he was a goose-feeder. He was pooh-poohed and laughed at, till he proved his consumption, which was twice as great as any of the sufferers present. It would be the same now, if some of those who fancy they represent important interests could see poultry-returns.

We have gone on glibly. We have had only to speak of generalities and of others. There is no difficulty in that; but now we must speak somewhat of ourselves.

Friends, correspondents, contributors, we thank you. It is much to say that all has gone on harmoniously for twelve months. We can say so, and when such is the case something is due to every one. We gratefully acknowledge it, and to such cheerful co-operation we attribute in a measure the success that attends us. We have no new profession of faith to make.

We appeal to the past, and assure our readers that as we have been so we will try to be.

Tied to no party, wedded to no opinion, we endeavour to hold an even balance, and to be the impartial record of all events that pertain to our columns. They are open to all, provided nothing offensive or injurious be found in the contributions. We can honestly say we have not knowingly printed one word with a view to cause pain: if we have done so unwittingly we are sorry for it. We would stand well with all, and in our mind's eye seeing all our friends, we desire to wish them heartily

A HAPPY NEW YEAR.

MANCHESTER POULTRY EXHIBITION.

ALTHOUGH the shadows of the last evening of the year 1862 are fast brooding around us as we commence our remarks on this interesting Meeting, it really appears but, as it were, yesterday when we stated that the inaugural meeting of this Society had taken place in the Belle Vue Zoological Gardens, among the many festivities provided for the public by the spirited proprietor, Mr. Jennison, last Christmas. Last year the Show was well supported on all hands; and the congratulations were universal, that although poultry shows in Manchester had unfortunately, from some cause or other, hitherto proved altogether a failure, under an improved management an entirely reversed issue was effected. The prizes of 1861 were in the aggregate £500, and the entries amounted to 565; the value of the premiums being somewhat dependant on the entry money received from the exhibitors. The worth of the prizes compared to the number of competitors being far greater than in any case that had preceded it, combined with the most prompt and scrupulous payment to the winners, augured well for future meetings; still there are always parties to be found who profess to see a cloud, however clear the horizon.

Acting on this grumbling anticipation of future ill luck, there were to be found those who, not being themselves successful in their own previous efforts, hesitated not to roundly affirm, that even apparently successful as everything then appeared, another year would prove its want of vitality, and that the "new Show" would soon follow in the footsteps of its predecessors. The dauntless proprietor of Belle Vue Gardens, however, was not to be turned from an object that had previously received his well-matured attention in all points: consequently, a far more commendous prize list was issued in connection with the present Meeting; and the entries it this year called forth were 1288, being very considerably beyond the double of last year, and carrying with them an appropriation of prizes to the tune of £800. The above statistics refer alike to both the poultry and the dogs, the Exhibition being a combination of the two, thus affording attractions to the lovers of either the one or the other. We rejoice that so well merited a result has ensued; for none could strive more energetically than did the whole of the Messrs. Jennisons to fulfil their duties with credit to the Show, tempered with an amount of civility to every inquirer the most praiseworthy. Each individual had his allotted task to perform, each stood well to his post, and the sequel proved that everything was carried out without mistake or misapprehension of any kind. The unbroken order, promptitude of action, and general management of the Exhibition thus became the subject of universal admiration.

A few of the most important points of excellence we must briefly allude to. Perhaps there is not to be found a building more excellently fitted for the carrying-out of such a Show than the great Music Hall of the Belle Vue Gardens. Every pen of poultry was placed at a proper height, and in a single tier. The light was universally good, so much so that the most anxious exhibitor would scarcely have troubled himself to make a selection for his birds, even had the opportunity been granted him. This is a boon to an exhibitor that cannot be spoken of too favourably. The scrupulous cleanliness of the pens and kind attention to the birds exhibited could not possibly have been surpassed.

This brings us more especially to the matter of the pens themselves. They were the most convenient we have met with, being both airy and sufficiently large for even a group of Cochins, Dorkings, Brahmas, Spanish, or Game fowls to move about in any direction without discommoding each other, thus also affording every visitor the most easy opportunity of narrowly examining every bird shown without the waste of a single moment. This

was a subject of general comment at the Manchester Show; and we hope that so truly important a feature in the arrangements of an exhibition will thus force itself again on the consideration of the Managing Committee of the Birmingham Meeting, where the pens have, unfortunately, of late been so injudiciously circumscribed, that when the larger varieties of poultry are penned, it at once becomes alike impossible for arbitrators or the public to see them properly, besides inflicting an amount of permanent injury on birds that certainly deserve, and ought to receive, a far greater amount of accommodation.

But to return to the pens at Manchester. These pens were provided with quite a new appliance; each had an iron bar that ran through both top and bottom, provided at the upper end with a loop, through the whole of which, from end to end of each tier of pens, a strong piece of wire was tightly strained, making it impossible for any of the birds to be interfered with by strangers. The eggs laid were instantly removed; and, as a further proof of the determination to stand aloof of even suspicion, every egg was at once broken at one end before placing it in the basket provided for their reception—a plan which should be universally adopted; as, to our knowledge, surmises of no very pleasant character have suggested themselves in recent cases to the minds of the proprietors of the fowls laying, by themselves afterwards witnessing the eggs (when not broken on the spot when first taken from the pens), being afterwards carefully packed to go no one professedly knew where.

It is not open to a doubt that the only legitimate purpose to which the eggs laid during an exhibition ought to be applied by any Committee are strictly those of a culinary nature: consequently the plan that was pursued at Manchester prevents the possibility of objection, for, being publicly broken, collusions of all kinds are prevented.

One of the most striking peculiarities of the Belle Vue Show was how uniformly excellent were the birds exhibited, this arising, most probably, from the fact of 10s. each pen being the rate of admission. This, of course, kept indifferent pens from being entered at all, and it was remarkable that scarcely any pens entered were not sent, for, as observed by a visitor, "Ten Shillings is too much to throw away without sending them." It is gratifying also to state that the awards were all completed before the time of public admission. This was effected by dividing the classes, as will be seen by reference to the appended prize list, among the various arbitrators; some of those gentlemen having actually completed their arbitrations in half the time placed at their disposal. Nothing that could insure this speed and regularity remained unappointed.

The classes for Silver-Grey *Dorkings* headed the list, and unexpectedly we found this really useful and beautiful variety not nearly so well represented as we anticipated—in fact, they were one of the weakest classes in the Exhibition. The cocks, almost without an exception, were either partially white-tailed or more or less spotted with white on the throat and breast, both of which are fatal objections, as both the breast and tail should be purely black. In the class for Silver-Grey *Chickens*, there were exhibited a pair of pullets, a bright clay colour, causing some merriment, and others slightly spotted with white. These palpable mistakes (attended, too, with an expenditure of 10s. entrance money in each instance), proves that the peculiarities of these birds are not generally understood. In the classes for coloured *Dorkings* except Silver-Greys, as might be expected, the rivalry was indeed severe. Viscountess Holmesdale, however, maintained the highest position by taking three first prizes for this breed alone. We may confidently state not an indifferent pen could be found throughout the collection, though the entries were some of the heaviest in number in the Show. The White *Dorkings* were few but good.

The *Spanish* classes come next in order, and proved a really meritorious collection, being by far the best we ever yet saw; Messrs. Rodbard, Martin, Tebbay, Potter, Hyde, and Smith exhibiting birds of as close an approach to perfection as can ever be expected to be attainable. The quality of the faces and perfect condition of the majority of the male specimens was remarkable, and evidently proved that all the winning birds had been especially reserved for the competition at Manchester.

We next come to the *Cochin-China* classes, decidedly among the great guns of the Exhibition. The number of entries in each of these classes was the best proof they still have many admirers. It was quite a treat to see four such pens as those that took prizes in the adult Buff class. Mr. Tomlinson, of Birmingham stood first with as good a pen as were ever yet sent

out by even that gentleman. Their character and condition were excellent, their size was unusual, and the matching of the pen perfect. Mrs. H. Fookes, in taking second place, showed a pair of the most lovely hens we have seen for a long time past, and the same remark is alike applicable to Mr. Bates' pen; but in the male birds Mr. Tomlinson easily gave these rivals the go-by. The class for chickens was but little if at all inferior to that of the old birds. Greater competition as to regularity of quality in well-filled classes never occurred at any Show than in the Partridge-coloured *Cochins*. Many breeders of this popular variety stated that "it was well worth a long journey to see these birds alone." By referring to the prize list it will be seen old names held position against a host of new comers. The White *Cochins* were nicely shown and of very high quality.

The *Malays* were not so good as we have seen at many other recent shows.

The best of the *Polands* were the White-crested and the Silver-spangled. The Golden-spangled ones disappointed most visitors.

We are now arrived at the Golden-pencilled *Hamburghs*. We pity the man who indulges the vain hope of ever seeing better, perfection being the order of the day. The birds exhibited by the Rev. T. L. Fellowes and Mr. J. Munn were constantly admired, and had not the arrangements of space in the avenues between the pens been so liberal and commodious, an absolute block-up by visitors must have ensued at the front of these particular pens. Nothing of the kind, however, occurred, and every one had ample opportunity of seeing them. The Silver-pencilled *Hamburghs* were not nearly so meritorious; and it certainly struck the breeders of this variety that the first prize in the old birds was a mistake of the Judges altogether. The Golden-spangled and Silver-spangled *Hamburghs* were excellent classes throughout.

Never were the *Game* classes in better trim than at Manchester. Pen after pen was shown in faultless condition and true to feather; Mr. Fletcher's Black-breasted Reds, Mr. Robinson's Brown Reds, and Mr. Harry Adams's Duckwings and Red Piles being the most noteworthy.

The *Game Bantams* were exquisite specimens, comprising a very large entry and scarcely a pen unworthy of notice. The other Bantams were few in numbers, but very good.

The Rouen *Ducks* were the best of the Duck classes, the first prize of £6 falling to a name quite new to us. This is as it should be: it causes old breeders to look to their colours.

The *Pigeons* were a marvellously good display, Mr. Peter Eden's Pouters, Carriers, and Barbs being among the highest ranks of perfection throughout the whole Show. We must also briefly allude to a pair of wonderfully good Mottled Runts shown by Mr. Baile, of London. The Owls were also particularly good.

We cannot conclude without congratulating the projectors on this more-than-even-anticipated success of their second Exhibition. In such hands the result is certain: progress will be the order of the day. Strange as it may appear to those who have not visited Belle Vue Gardens, the great Music Hall would, with perfect comfort, easily accommodate twice the number of entries of even the Show just closed, and the manner in which the birds have this year, as well as last, been treated has been such that increased public confidence must, beyond question, ensue.

As the weather proved so spring-like there was no cause for heating the Hall this year; otherwise had stress of hard weather taken place the whole could have been at once heated, and the comforts of both visitors and poultry provided for. Enjoying so many unusual advantages for holding such meetings, combined with the same civility to high and low, rich and poor, we have no doubt that Manchester will take its place in the very foremost ranks of our poultry exhibitions.

DORKINGS (Silver-Grey).—First, J. Dixon, Bradford. Second, Mrs. Hill Woodlands, Heywood. **Cock.**—Prize, T. Statter, Stand Hill, Whitefield. **Hens.**—First, E. Musgrove, Aughton, near Ormskirk. Second, J. K. Fowler, Aylesbury. **CHICKENS.**—First, G. Cargay, Stone. Second, T. Statter. Third, W. R. Court, Middlewich. **Cockerel.**—First, T. Statter. Second, R. Carr, Towngate, near Preston. **Pullets.**—Prize, Mrs. M. Seamons, Hartwell, Aylesbury, Bucks.

DORKINGS (Coloured, except Silver-Grey).—First, W. Copple, Eccleston, Prescott. Second, T. Burgess, Whitechurch, Salop. Third, Viscount Holmesdale, Staplehurst, Kent. Highly Commended, E. Tudman, Whitechurch, Salop. Commended, Viscount Holmesdale; Mary Hill Woodlands, Heywood. **Cock.**—First, Viscount Holmesdale. Second, Mrs. Rothery, Halsemere, Surrey. Third, E. Tudman. Highly Commended, E. Smith, Middleton. **Hens.**—First, H. W. B. Berwick, Helmsley, Yorkshire. Second, Mrs. A. Guy, Eaton, near Grantham. Third, J. Robinson, Garstang.

Highly Commended, E. H. Garrard, Broadway, Worcester. CHICKENS.—First, Viscount Holmesdale. Second, W. T. Everard, Barton Hill House, near Ashby-de-la-Zouch. Third, J. Holme, Knowsley, near Prescott. Fourth, C. H. Wakefield, Malvern Wells. *Cockerel*.—First, E. Tudman. Second, E. Shaw, Plus Wilmot, Oswestry. Third, Mrs. Hill. Highly Commended, Rev. J. G. A. Baker, Biggleswade, Beds. Commended, T. Rigby, Penny Wood, Winsford. *Pullets*.—First, Viscount Holmesdale. Second, T. E. Kell, Wetherby, Yorkshire. Commended, G. Potter, Fallowfield, Manchester.

DORRINGS (White).—Prize, Mrs. H. Fookes, Whitechurch, Blandford. *Cock*.—Prize withheld. CHICKENS.—Prize, W. Chamberlain, Desford, near Leicester.

SPANISH.—First, J. Martin, Bingley. Second and Third, R. Teebay, Fulwood, near Preston. Highly Commended, R. B. Postans, Brentwood. *Cock*.—First, J. R. Rodbard, Writington, near Bristol. Second, J. Potter, Droylsden. Third, T. P. Wood, Boythorpe House, near Chesterfield. Fourth, J. W. Smith, Northamptonshire. Highly Commended, R. Teebay. Commended, J. Suddal, Halifax. *Hens*.—First, S. A. Hyde, Ashton-under-Lyne. Second, J. Shorthose, Newcastle-upon-Tyne. Commended, H. Lane, Bristol. CHICKENS.—First, R. Teebay. Second, H. Lane. Third, E. Brown, Sheffield. Fourth, E. C. Monk, Fleetwood. Highly Commended, H. Yardley, Market Hall, Birmingham. *Cockerel*.—First, J. Potter. Second, H. Lane. Third, S. Robson, Brotherton, Barton Salmon. Commended, J. S. Lowndes, Aylesbury. *Pullets*.—First, J. W. Smith. Second, H. Lane. Third, Mrs. Craigie, Chigwell, Essex. Highly Commended, Mrs. Craigie.

COCHIN-CHINA (Cinnamon and Buff).—First, H. Tomlinson, Birmingham. Second, Mrs. H. Fookes, Whitechurch. Third, H. Bates, Birmingham. Fourth, E. Musgrove, Aughton, near Ormskirk. Highly Commended, J. E. Walthew, Aughton, near Ormskirk. *Cock*.—First, T. Boucher, Birmingham. Second, H. Bates, Birmingham. Highly Commended, E. Smith, Middleton. *Hens*.—First, Master J. T. Smith, Middleton. Second, H. Bates. Commended, W. Copple, Eccleston, Prescott. CHICKENS.—First, G. Fell, Warrington. Second, H. Tomlinson, Birmingham. Third, T. Stretch, Ormskirk. Commended, E. Musgrove; H. Bates. *Cockerel*.—First, J. Potter, Droylsden. Second, J. Elliott, Leigh. Third, R. White, Sheffield. *Pullets*.—First, Rev. G. Gilbert, Norwich. Second, H. Bates.

COCHIN-CHINA (Brown and Partridge-feathered).—First, E. Musgrove. Second, E. Tudman, Whitechurch, Salop. Third, J. Shorthose, Newcastle-upon-Tyne. Highly Commended, R. Chavasse, Birmingham. Commended, T. Stretch. *Cock*.—First, J. Shorthose. Second, E. Tudman. Highly Commended, J. Holme, Knowsley, Prescott. *Hens*.—First, Capt. Heaton, Manchester. Second, J. B. Walthew, Ormskirk. Highly Commended, E. Tudman. CHICKENS.—First, T. Stretch. Second, Capt. Heaton. Third, E. Tudman. *Cockerel*.—First, R. White. Second, E. Tudman. *Pullets*.—First, J. B. Walthew. Second, E. Smith, Middleton.

COCHIN-CHINA (White).—First, R. Chase, Birmingham. Second, G. C. Whitwell, Kendal. Third, F. W. Zudhorst, Dublin. *Cock*.—Prize, R. Chase. CHICKENS.—First, R. Chase. Second, G. Blyth, Birmingham. Third, W. Copple, Eccleston, Prescott. *Cockerel*.—Prize, D. Causer, Birmingham.

BRAMA POOTRA.—First and Second, R. Teebay, Fulwood. *Cock*.—Prize, R. Teebay. CHICKENS.—First, J. K. Fowler, Aylesbury. Second, Mrs. M. Seamons, Aylesbury. Third, J. Pares, Chertsey. Commended, R. Teebay. *Cockerel*.—Prize, R. Teebay.

MALAYS.—First, withheld. Second, N. Sykes, jun., Mile End, London. *Cock*.—Prize, G. H. Evans, Lancashire. CHICKENS.—First, J. Choyce, jun., Atherstone. Second, N. Sykes, jun. *Cockerel*.—First, withheld.

POLAND (Black, with White Crests).—First, H. Carter, Holmfirth. Second, J. Dixon, Bradford. *Cock and two Pullets*.—Prize, J. Dixon. *Cockerel*.—Prize, S. Farrington, Chat Moss, Manchester.

POLAND (Golden).—Prize, J. Dixon, Bradford. *Cock*.—Prize withheld. CHICKENS.—Prize, J. Dixon.

POLAND (Silver).—Prize, J. Dixon. *Cock*.—Prize, J. Dixon. CHICKENS.—Prize, W. Newsome, Bingley. *Cockerel*.—Prize withheld.

ANY OTHER DISTINCT VARIETY.—Commended, D. Howarth, Manchester.

HAMBURG (Golden-pencilled).—First, Rev. T. L. Fellowes, Norfolk. Second, J. Munn, Newchurch. Third, A. Nuttall, Newchurch. *Cock*.—Prize, J. Garts, Bradford. CHICKENS.—First and Second, J. Munn. Third, Rev. T. L. Fellowes. Fourth, Mrs. W. Kershaw, Heywood. *Cockerel*.—First, Mrs. W. Kershaw. Second, J. Robinson, Garstang. Third, W. Rothwell.

HAMBURG (Silver-pencilled).—First, D. Harding, Cheshire. Second, J. Martin, Worcester. Third, W. Cannan, Bradford. CHICKENS.—First, J. Martin. Second, T. W. Walsh, Worcester. Third, G. Addison, Bradford. Fourth, J. Dixon, Bradford. *Cockerel*.—Prize, S. Fielding, Middleton.

HAMBURG HENS (Pencilled).—Prize, J. Munn, Newchurch. *Pullets*.—Prize, J. Robinson, Garstang.

HAMBURG (Golden-spangled).—First, J. Davies, Birmingham. Second, P. Swindells, Stockport. Third, S. H. Hyde, Ashton-under-Lyne. Highly Commended, W. Cannan, Bradford; H. Carter, Holmfirth. *Cock*.—Prize withheld. CHICKENS.—First, S. H. Hyde. Second, N. Marlor, Denton. Third, G. Whittaker, Bolton. Fourth, J. Dixon, Bradford. Highly Commended, J. Roe, Manchester. *Cockerel*.—First, J. Mellor, Slaithwaite. Second, J. Buckley, Ashton-under-Lyne. Third, P. Swindells.

HAMBURG (Silver-spangled).—First, J. Dixon, Bradford. Second and Third, H. Dale, Middlewich. *Cock*.—Prize, J. Robinson, Garstang. CHICKENS.—First and Second, J. Fielding, Newchurch. Third, J. Robinson. Fourth, W. Cannan, Bradford. *Cockerel*.—First, J. Dixon. Second, P. Swindells, Stockport.

HAMBURG HENS (Spangled).—First, H. W. B. Berwick, Yorkshire. Second, J. Roe, Manchester. *Pullets*.—First, H. W. B. Berwick. Second, S. H. Hyde, Ashton-under-Lyne.

GAME (Black-breasted Reds).—First, J. Stubbs, Stafford. Second, C. Chaloner, Sheatley, Notts. Third, J. Fletcher, Manchester. Fourth, H. Adams, Yorkshire. Fifth, E. H. Sykes, Stockport. *Cock*.—First, C. Chaloner. Second, J. Stubbs. Third, J. Fletcher. Fourth, J. Wharin, jun., Rotherham. Highly Commended, J. S. Butler, Poulton-le-Fylde; H. Adams. CHICKENS.—First, J. Fletcher. Second, J. Martin, Worcester. Third, S. Matthew, Suffolk. Fourth, W. Bourne, Newton Heath. Fifth, G. Cargay, Stone. Highly Commended, J. Stubbs; A. B. Dyas, Madeley, Salop. *Cockerel*.—First, T. Whittingham, Naatwich. Second, N. Grimshaw, Burnley. Third, S. Matthew, Suffolk. Fourth, T. Bottomley, Halifax. Fifth, S. Harrop, Manchester.

GAME (Brown and other Reds, except Black-breasted).—First, T. Robinson, Ulverstone. Second, C. Chaloner, Sheatley, Notts. Third, J. Fletcher,

Manchester. Fourth, H. Adams, Yorkshire. Fifth, C. Cargay, Stone. Highly Commended, T. Statter, Whitefield; T. Robinson. Commended, R. Swift, Notts. *Cock*.—First, R. Swift. Second, T. Statter. Third, C. Chaloner. Fourth, N. Grimshaw, Burnley. Fifth, T. Moss, Poulton-le-Fylde. Highly Commended, T. Howarth, Manchester. CHICKENS.—First, S. Matthew, Suffolk. Second, J. Wood, Wigan. Third, J. Fletcher. Fourth, H. Adams. Fifth, R. Swift. Highly Commended, H. Parker, Shropshire; G. Cargay. Commended, R. Peacock, Gorton Hall. *Cockerel*.—First, J. Wood. Second, G. Clements, Birmingham. Third, N. Grimshaw. Fourth, A. B. Dyas, Madeley, Salop. Highly Commended, J. Fletcher.

GAME HENS (Black-breasted and other Reds).—First, N. Grimshaw, Burnley. Second, H. Adams, Yorkshire. Third, W. T. Everard, Ashby-de-la-Zouch. *Pullets*.—First, J. Stubbs, Stafford. Second, J. Wood, Wigan. Third, R. Parkinson, Poulton-le-Fylde. Highly Commended, W. Pares, Derby; J. Camm, Southwell, Notts.

GAME (Duckwings, and other Greys and Blues).—First, H. Adams, Yorkshire. Second, J. Fletcher, Manchester. Third, W. Kershaw, Heywood. CHICKENS.—First, J. Martin, Bingley. Second, J. Hodgson, Bradford. Third, J. Stubbs, Stafford.

GAME (except Black-breasted and other Reds).—First, E. Needham, Chesterfield. Second, J. Wilders, Grantham. Third, J. Hindson, Liverpool. Fourth, J. Grocott, Cheshire. Highly Commended, E. Viggor, Cheshire. CHICKENS.—First and Second, J. Fletcher, Manchester. Third, J. Wood, Wigan.

GAME (Black and Brassy-winged, except Grey).—First, J. Fletcher, Manchester. Second, T. Burgess, Whitechurch. CHICKENS.—Prize, J. Fletcher.

GAME (White and Piles).—First, H. Adams, Yorkshire. Second, A. Guy, Eaton. Third, J. Camm, Notts. Highly Commended, J. Fletcher, Manchester; S. Matthew, Suffolk. CHICKENS.—First, H. Adams. Second, J. Wilders, Grantham. Third, B. W. Bretherton. Fourth, A. Hartley, Rochdale. *Cockerel*.—Prize, J. Fletcher.

GAME HENS (except Black-breasted and other Reds).—First, H. Adams, Yorkshire. Second, J. Hindson, Liverpool. CHICKENS.—Prize, W. Pares, Derby.

GAME BANTAMS (Black-breasted and other Reds).—First, T. H. D. Bayly, Biggleswade, Beds. Second, J. Grocott, Cheshire. *Cockerel and two Pullets*.—First, J. W. Kelleway, Isle of Wight. Second, J. Camm, Notts. Third, T. H. D. Bayly. Fourth, E. Yardley, Sheffield. Highly Commended, E. Musgrove, Ormskirk.

GAME BANTAMS (Any other variety).—First, C. W. Brierley, Rochdale. Second, R. B. Postans, Brentwood. *Cockerel and two Pullets*.—First, J. Camm, Notts. Second, R. Hawkesley, Southwell. Third, M. Billing, jun., Southwell. Highly Commended, R. Hawkesley; W. Lawrenson, Poulton-le-Fylde.

GAME BANTAM COCKS.—First, J. Munn, Newchurch. Second, R. B. Postans, Brentwood. *Cockerel*.—First, W. Lawrenson, Poulton-le-Fylde. Second, R. Swift, Southwell. Third, J. W. Kelleway, Isle of Wight. Fourth, T. H. D. Bayly, Biggleswade, Beds. Highly Commended, R. Hawkesley, jun., Southwell.

BANTAMS (Gold-laced).—Prize, P. Norbury, Timperley. *Cockerel and two Pullets*.—Prize, J. Dixon, Bradford.

BANTAMS (Silver-laced).—Prize, T. H. D. Bayly, Biggleswade, Beds. *Cockerel and two Pullets*.—Prize, R. M. Stark, Hull.

BANTAMS (White, Clean-legged).—First and Second, E. Holdsworth, Leeds. Highly Commended, T. H. D. Bayly, Biggleswade, Beds. *Cockerel and two Pullets*.—First, J. Dixon, Bradford. Second, J. Rumsey, South Hackney.

BANTAMS (Black, Clean-legged).—First, W. Cannan, Bradford. Second, T. Rigby, Winsford. *Cockerel and two Pullets*.—First, Miss M. Harrop, Manchester. Second, T. Rigby.

BANTAMS (Any other variety).—Prize, F. Musten. *Cockerel and two Pullets*.—Prize, P. W. Storey, Northamptonshire.

BANTAMS (except Game).—Prize, P. Robinson.

DUCKS (White Aylesbury).—First, W. Dolby, Rotherfield, Sussex. Second Third and Fifth, Mrs. M. Seamons, Aylesbury. Fourth, E. Viggor, Cheshire. DUCKS (Rouen).—First, G. Winn, Liverpool. Second, E. Longton, Liverpool. Third, J. Munn, Newchurch. Fourth, T. Statter, Whitefield. Fifth, R. E. Ashton, Bury, Lancashire. (Highly meritorious class.)

DUCKS (Black East Indian).—First, J. R. Jessop, Hull. Second, R. M. Stark, Hull. Highly Commended, F. W. Earle, Prescott.

DUCKS (Any other variety).—First, T. H. D. Bayly, Biggleswade, Beds. Second, J. Dixon, Bradford. Third, M. Hill, Woodlands, Heywood.

ORNAMENTAL WATER FOWLS.—Prize, J. Dixon, Bradford.

GESE (White).—First, W. Kershaw, Heywood. Second, Mrs. M. Seamons, Aylesbury.

GESE (Grey and Mottled).—First, W. Kershaw, Heywood. Second, J. Taylor, Stretford.

TURKEYS.—First, Mrs. A. Guy, Grantham. Second, J. Eckersley, Chorley, Lancashire. *Cock and two Hens*.—First, J. Smith, Grantham. Second, J. Dixon, Bradford.

EXTRA STOCK.—First, J. Harrison, Blackpool. Second, W. Chamberlain, Leicester. Third, C. Bocquet, Route D'Ivry, Paris.

PIGEONS.

POWTERS.—First and Second, F. H. Evans. Third, P. Eden, Salford. (Highly meritorious class.)

CARRIER COCK (Black).—First, E. S. Corker, Croydon. Second, J. Wadsworth, Halifax. *Any other colour*.—First, T. Colley, Sheffield. Second, P. Eden, Salford. Very Highly Commended, P. Eden.

CARRIER HEN (Black).—First, E. S. Corker, Croydon. Second, P. Eden, Salford. Third, J. Wadsworth, Halifax. *Any other colour*.—Prize, P. Eden.

DRAGONS.—First, F. Esquilant, Oxford Street, London. Second and Fourth, T. Ridpath, Rusholme. Third, C. J. Samuels, Manchester. Highly Commended, J. Wadsworth, Halifax; T. D. Walker, Liverpool.

JACOBIANS.—First, F. Esquilant, London. Second, H. Morris, Forest Hill, Kent. Third, W. Carlton, Howden.

NUNS.—Prize, F. Elso, Bayswater.

RUNTS.—First, J. Baily, jun., Mount Street, London. Second, C. Bocquet, Route D'Ivry, Paris.

BARBS.—First, P. Eden, Salford. Second, A. L. Silvester, Birmingham. Third, T. D. Walker, Liverpool.

TURBITS.—First, F. Elso, Bayswater. Second, A. L. Silvester, Birmingham.

OWLS.—First, F. Elso, Bayswater. Second, H. Morris, Forest Hill, Kent. Third, H. Yardley, Birmingham. Fourth, T. Ridpath, Rusholme.

TRUMPETERS.—First, W. H. C. Oates, Newark. Second, J. Baily, jun., Mount Street, London. Third, C. J. Samuels, Manchester. Highly Commended, F. Key, Beverley.

FANTAILS.—First, J. W. Edge, Birmingham. Second, T. Ridpath, Rusholme. Third, F. Else, Baywater.

ALMOND TUMBLERS.—First and Third, P. Eden, Salford. Second, E. T. Corker, Croydon. Commended, H. Clegg, Oldham; J. Cheetham, Rochdale.

BALDS.—First, F. Esquilant, London. Second, J. W. Edge, Birmingham.

TUMBLERS (Any other variety).—Prize, J. Cheetham, Rochdale.

BEARDS.—First, W. H. C. Oates, Newark. Second, F. Else, Baywater.

Third, F. Esquilant, London. Commended, T. Ridpath, Rusholme; J. W. Edge, Birmingham.

ANY OTHER NEW OR DISTINCT VARIETY.—First, A. L. Silvester, Birmingham. Second, Lady E. Talbot, Knowsley, near Prescott. Third, A. F. Leite, Manchester.

JUDGES.—*Poultry*: Edward Hewitt, Esq., Eden Cottage, Sparkbrook, Birmingham, and G. J. Andrews, Esq., Dorchester—Classes 1 to 42; J. Douglas, Esq., Ranton Abbey, Staffordshire, and T. Chaloner, Esq., Whitwell, Chesterfield—Classes 81 to 119; W. Lloyd, Esq., Waverham, near Northwich, Cheshire, and Philip Castang, Esq., London—Classes 43 to 80, and 120 to 129. *Pigeons*: T. J. Cottle, Esq., Pulteney Villa, Cheltenham.

HECKMONDWIKE POULTRY SHOW.

THE first annual Exhibition of Single Cocks took place on Friday, the 26th ult., at the Royal Hotel, Heckmondwike, when there was a first-rate display of Game and other cocks.

GAME (Reds).—First, H. Beldon, Bradford. Second, H. Hatton, Cleckheaton. Third, H. C. Mason, Drighlington. (The competition was so severe in this class that the Judges were obliged to give a third prize.)

GAME (Duckwings).—First, W. H. Atkinson, Heckmondwike. Second, H. Beldon, Bradford.

GAME (White and Piles).—First, H. C. Mason. Second, H. Beldon.

GAME (Blacks and Brassy-winged).—First, G. Noble, Heckmondwike.

Second, T. Hartley, Gomersal.

GAME BANTAMS (Red).—First, I. Goodhull, Heckmondwike. Second, J. Wilson, Dewsbury Moor.

GAME BANTAMS (Duckwing).—First, T. Hirst, Batley Carr. Second, C. Lister, Mirfield.

BANTAMS (Black).—First, J. Parker, Heckmondwike. Second, H. Beldon.

BANTAMS (White).—First, J. Elam, Heckmondwike. Second, H. Beldon.

ANY OTHER VARIETY.—First, T. Greenwood, Dewsbury (Black Spanish). Second, H. Beldon (Golden Poland). Third, H. Rushforth, Mirfield (Golden-pencilled Hamburg).

Messrs. William Marriott, Dewsbury, and Henry Wood, Great Horton, officiated as Judges, whose decisions gave great satisfaction.—J. THOENTON, *Hon. Sec.*

THE SCOTTISH NATIONAL POULTRY SHOW.

ON Christmas-day the first Show under the auspices of this National Society was held in the Queen's Rooms, Glasgow, and certainly, in every respect, it did credit to all the parties connected with it. The arrangements were complete. The entries amounted to 406 pens, including about 1200 fowls; the aggregate amount of the prizes awarded was about £150; and the attendance, notwithstanding the inauspicious character of the weather, was very numerous, including our leading citizens, accompanied by ladies and gentlemen from Edinburgh and other parts of Scotland, and a few from the South.

This Society was originated at the end of last summer, with the view of improving the various breeds of poultry, and giving, if possible, an impetus to this branch of agriculture, as well as to enlist attention to the matter by others not engaged in agricultural pursuits. It had its origin in the fact that the Glasgow Agricultural Society had given up their winter show of poultry. This being regretted by many, a meeting was called, and a Committee appointed, with Mr. R. Cowan, Gordon Street, as Secretary; and a better Secretary could not have been found, for he has laboured most patiently, and spared no pains to insure the success of the splendid display now in the Queen's Rooms—for which poultry-fanciers and the public in general owe him a deep debt of gratitude.

Making a somewhat careful examination of the pens, the leading feature was most palpably the general excellence of the fowls; indeed there was not a bad bird in the whole Show, and very many that we have never seen equalled. In adult *Dorkings*, we state enough when we say that it comprised the winning birds from the recent leading English and Scotch shows; and, in the opinion of good judges, there never was a finer show of *Dorkings* exhibited. In the second class the fowls approached very close to each other, so that, as is often the case, the Judges did not satisfy all. The *Spanish* class never were better represented, a leading breeder from Lancashire carrying off the first

prize; and many of the best of our own county breeders also showed. The *Scotch Greys*—our national bird—were numerous and well represented. The show of *Cochin-Chinas* was perhaps the finest that has ever been seen together, and the Gold-pencilled and Gold-spangled *Hamburgs* were very numerous and very good. The *La Flèche* pen of Mr. D. Allen was probably the first of that breed ever shown in Scotland. The *Game Bantams* formed perhaps the most interesting class in the Exhibition, from the variety and beauty of their plumage.

Of *Rouens* there was undoubtedly one of the finest shows ever seen, and the Judges admitted that they never had so much difficulty in giving their awards as in this class. The *Turkeys* were in excellent condition; and such fowls as those which gained the first prize, and which were quickly bought by a great Scotch poultry-fancier, are seldom seen. The *Ganders* and *Geese* were also remarkably fine; the first-prize pen weighed 54 lbs., and the second 50 lbs.

We subjoin the names of the Judges, who were all from England, and their awards:—Mr. J. Douglas, Ranton Abbey, Staffordshire; Mr. E. Chaloner, Whitwell, near Chesterfield; and Mr. R. Swift, Nottinghamshire.

DORKING.—First, Earl of Wemyss and March, Harelaw, Longniddrie. Second, D. V. Allen, Inchmartine, Inchture. Third, H. W. B. Berwick, Helmsley, Yorkshire. Highly Commended, J. D. Wauchope, Dalkeith; D. V. Allen, *Chickens*.—First, D. V. Allen. Second, J. C. Wakefield, Thornliebank. Third, Earl of Wemyss and March. Highly Commended, J. D. Wauchope, Dalkeith. Commended, J. Anderson, Meikle; J. Gibson, Woolmet, Dalkeith.

SPANISH.—First, R. Teabay, Fulwood, Preston, Lancashire. Second, W. McIntyre, Coalhall, Stair, Ayrshire. Third, Miss B. Ridpath, Edinburgh. Highly Commended, J. K. Fowler, Aylesbury; W. Wilson, jun., Beith. Commended, W. Pettigrew, Driften, Lesmahagow. *Chickens*.—First and Second, W. McIntyre. Third, R. Teabay.

SCOTCH GREY.—First, W. Thomson, Glasgow. Second, W. Pettigrew, Driften, Lesmahagow. Third, R. Watson, Cathcart. Commended, S. Young, Kirkton Mill, Neilston. *Chickens*.—First, J. Gilmour, Broom, Stewarton. Second, W. Thomson, Glasgow. Third, J. Connell, Hillhead, near Johnston. Highly Commended, W. Thomson; S. Young.

COCHIN-CHINA.—First, Miss Biggar, Nethermilne, Moffat. Second, E. Smith, Middleton, near Manchester. Third, Miss E. A. Aglionby, Wighton, Cumberland. (The whole class highly commended). *Chickens*.—First, Miss E. A. Aglionby. Second, A. Patterson, Airdrie. Third, D. V. Allen. Commended, Countess de Flahault, Tullyhally Castle; E. Smith; D. V. Allen.

HAMBURG (Gold-pencilled).—First, W. H. Dyson, Horton Bank Top, Bradford. Second, J. C. Wakefield, Eastwood Park, Thornliebank. Third, W. Cannan, Adolphus Works, Bradford. Highly Commended, A. Glen, Erskine; C. W. Brierley, Rochdale. Commended, W. Gilmour, Stonehouse.

HAMBURG (Gold-spangled).—First, Mrs. W. Whitehead, Kingsland Road, Shoreditch, London. Second, N. Marlor, Denton, near Manchester. Third, W. Cannan, Bradford.

HAMBURG (Silver-pencilled).—First, Miss E. A. Aglionby. Second, J. C. Wakefield. Third, A. Yuill, Airdrie.

HAMBURG (Silver-spangled).—First, J. Stewart, Springhill, Barrhead. Second, J. C. Wakefield. Third, E. Collinge, Boarshaw, Clough, Middleton, near Manchester. Highly Commended, R. Teabay.

POLAND (any colour).—First and Second, Miss E. Beldon, Bradford. Third, Countess de Flahault, Tullyhally Castle, Kincardine-on-Forth. Highly Commended, A. Yuill; S. Neil, Airdrie.

ANY OTHER BREED.—First and Third, D. V. Allen (Brahma Pootra and La Flèche). Second, E. Hutton, Pudsey, Leeds (Black Hamburgs). Highly Commended, D. V. Allen (Crève Cœur). Commended, B. Barker, Wyseby Hill, Kirtlebridge (Chinese Silky fowl).

GAME (Black-breasted Red and other Reds).—First, J. Hodgson, Bradford. Second, J. Anderson, Meikle. Third, Miss E. Beldon, Bradford. Highly Commended, J. Wood, Haigh, near Wigan. Commended, J. Firth, Halifax; J. H. Macnab, South Arthurle, Barrhead. *Chickens*.—First, J. Anderson. Second, A. B. Dyar, Madeley, Salop. Third, J. Mollison, Ruthven, Meikle. Commended, J. Firth, Halifax; T. Moss, Poulton-le-Fylde, Lancashire.

GAME (Any other colour).—First, A. Guy, jun., Eaton, Grantham. Second, J. Hodgson, Bradford. *Chickens*.—First, J. Mollison, Meikle. Second, J. Wood, Moathouse, Haigh, near Wigan. Third, J. Crosland, jun., Wakefield, Yorkshire. Commended, J. Hodgson.

BANTAMS (Game).—First, W. R. Lane, Bristol Road, near Birmingham. Second, J. Anderson. Third, J. Crosland, jun. Highly Commended, Dr. Corbett, Barrhead. Commended, J. Crosland, jun.; Mrs. Gilmour, Shawburn, Hamilton.

BANTAMS.—First, J. Anderson. Second, E. Hutton. Third, G. J. Maclean, Edinburgh.

DUCKS (Aylesbury).—First, J. K. Fowler, Prebendal Farm, Aylesbury. Second, J. Smith, Breder Hills, Grantham, Lincolnshire. Third, H. Heyes, Springfield House, Barrhead. Highly Commended, A. Cameron, Bogside, by Springburn; H. Heyes; J. C. Wakefield. Commended, J. M'Cowan, Old Cumnock.

DUCKS (Rouen).—First, J. Gibson, Woolmet, Dalkeith. Second, Lord Kinnaird, Rossie Priory, Inchture. Third, D. V. Allen. Highly Commended, A. Cunningham, Craigends, Renfrewshire; W. M. Gilmour, Shawburn, Hamilton. Commended, J. Gibson, Woolmet, Dalkeith. (The whole class highly commended.)

DUCKS (Any other breed).—First, Countess de Flahault, Kincardine-on-Forth. Second, Mrs. W. Whitehead, Shoreditch, London. Third, E. Hutton. Highly Commended, D. V. Allen; A. Cunningham.

TURKEYS.—First, J. Smith. Second, D. V. Allen. Third, Mrs. A. Guy, Eaton, near Grantham. (The whole class highly commended.)

GESE.—First, J. K. Fowler, Prebendal Farm, Aylesbury. Second, H. Heyes, Springfield House, Barrhead. Third, D. V. Allen. (The whole class highly commended.)—(*Glasgow Herald*.)

YELLOW-LEGGED GAME BANTAMS.

You must know that I am a member of the "Yellow-legged Game Bantam fraternity," and my forefathers have gained many laurels in the days when yellow legs were considered the crack colour; but since the olive or willow understandings have become the rage, I and my brethren have been obliged to succumb, and at best get only a commendation.

Now although I cannot expect the high honours myself, I should be proud to see my progeny in the lists with some chance of success; and as I am about to mate with two of the opposite sex who have what are called blue legs, I shall take it a favour if you or any of your kind correspondents will inform me whether I and my blue-legged spouses are likely to produce the desired Willow.—UN COQ.

["Vous êtes poursuivi par un songe," no one has objected to your yellow stockings. When you won, they were not the cause; when you lost they were guiltless. If you will show yourself the worthier, willow legs will not save your antagonist. The alliance you propose will not, we fear, be successful; and since you are so ashamed of your continuations, that you would not wish them to be hereditary, we advise you to make a match with willow legs, and to centre your affections on those of your olive-branches that take after "mamma."]

SILVER-GREY DORKINGS.

SOME two years ago I had a little friendly controversy with you about the points of Silver-Grey Dorkings, and I am obliged once more to take up the pen on behalf of my favourites, which are threatened expulsion from Bingley Hall by no less a person than yourself, because, forsooth, there were only six entries in the adult class, and only two pens were considered worthy of a prize. Let us look, Mr. Editor, at a few facts. There are five classes for Silver-Greys, and five for Spanish; the entries for the former are 71, and for the latter 59, giving rather over 14 as the average in the former, and not quite 12 in the latter. Again, there are 94 classes of poultry, and 1368 entries, being an average of about 14½ for each class—so that the Silver-Grey Dorkings, the latest, or rather the newest class, already come up to the average entry, and I have little doubt but that they will go on increasing, for "the coloured Dorkings" (not Silver-Greys) cannot for a moment be compared to them for beauty, and you acknowledge we are fast coming up to them in size. Let us look at the two classes as we go along—first at the Silver-Greys—all the pens uniform in colour, the cock with black breast and tail and beautiful light hackle; the hens such lovely grey bodies, and black and white hackles. What a contrast to the coloured class!—scarcely two pens alike in colour; but I will not attempt to describe them, but refer you to the letter of "E. C." in your Number of December 9th, where he dilates upon mottled breasts, white tails, and light and dark highly-commended pullets, &c. Surely, Mr. Editor, I have written enough to prove that the Silver-Greys are worthy of a class in Bingley Hall, and at all first-rate shows.—A BREEDER OF SILVER-GREYS.

[We are anxious to give you all the adhesion we can, but we still think we are right. It is for the breeders of these beautiful birds to correct us if wrong. That cannot be done on paper. The increase in the entries of old birds next year will be the most convincing argument. We have strong doubts as to the possibility of breeding them with certainty of producing colour. We bred last year from a cock in which we could detect no fault; the hen this year moulted with a white breast halfway down. If in the adult state, the points of perfect beauty disappear, they become that from which they sprung, and which are despised by the "Silvers." They are "Greys." If our correspondent can prove they are a breed, we will at once concede they are far more beautiful than the Greys or coloured.]

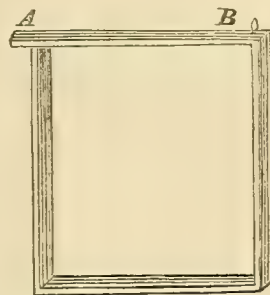
DZIERZON'S BEE-HIVE IMPROVED.

In your Number for November 25th, 1862, you give a drawing and partial description of Dzierzon's bee-hive. Will you kindly give one of your readers, who had not the opportunity of seeing it at the International Exhibition, such a description of it as may enable an ordinary mechanic to make one? It is especially desirable to have very clear directions as to the making and fixing the frames. Not understanding German, I shall be

thankful to be told the meaning of the word "lager."—A BEE-KEEPER.

[The German word "lager" has almost as many different significations as the English word "box." When applied to a bee-hive, it means "lying down." For instance: the "lager-stock" is a long hive only one storey high, something like our English collateral-hives, but having the entrance at one end, and consisting of only one compartment; whilst it differs entirely from the "Standerstock," which stands upright, and accommodates two, or sometimes three tiers of combs.

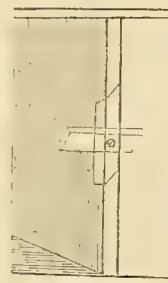
The accompanying sketch represents one of the frames of the Danish hive described in page 688 of our last volume. The projection at A rests on a ledge in the central partition, whilst the other end is sustained by the small eye B, which slips on a little wire hook driven into the top of the hive. The frame is kept from vibrating to and fro, by the lower part dropping into one of the notches in a strip of wood running from front to back, as shown in the original engraving. If you bear in mind that the frames are all 9 inches wide, by 10 inches



deep inside, and that half an inch clear space should be left at their top, bottom, and sides, whilst they are so arranged as to be exactly 1½ inch from centre to centre, there will be little difficulty in determining the exact size of each compartment. The strips of wood of which the frames are made, are 1 inch broad and a quarter of an inch thick. We should commence by making a dovetailed "carcase," as it is technically called, of inch wood with partitions half an inch thick. The roof and pedestal should be separate and moveable.

The annexed sketch shows the mode of communication between the brood-room and the honey-room of each compartment. It will be perceived that a piece about 6 inches long by three-quarters of an inch deep is cut diagonally out of the edge of the partition next to the glass, and is kept in its place by means of a central screw. When in its original position the communication is of course closed, but is readily opened by turning it as indicated by the dotted outline.

In the Exhibition-hive the side of each compartment was closed by two panes of glass in frames of equal size, and meeting in the centre as shown in the engraving. If we were making a hive of this description we should prefer to have the two panes and their frames of unequal size, but corresponding to the dimensions of the brood-room and honey-room in each case.]



BEE-FEEDERS.

MR. GEORGE ELDRIDGE, brazier, Woodstock, makes my zinc bee-feeders, and would be most happy to do so for "H. A. H.," and they would cost 1s. each, with package. But as carriage also would ultimately have to be considered, would it not be better if "H. A. H." were to order them of the nearest tin-plate-worker? I advise a distinction and a difference to be made in feeding bees; the contrivance for early spring use which I adopt is made of zinc. It is 10 inches long in the trough, 1½ inch broad, two-eighths of an inch deep, having a rounded handle attached to it 1 foot long and about three-eighths of an inch in diameter. It is so simple that a child can apply it without danger to itself or the bees either; it has merely to be inserted at the entrance of the hive in the dusk of the evening, when the weather is not frosty, and drawn away again the first thing next morning. It holds between two and three tablespoonfuls of honey, and less than that will be quite sufficient at a time during this season of the year.

"H. A. H." wishes also to be informed how to make the autumn bee-feeder out of a fig-drum.

Procure an empty fig-drum—and I trust to be forgiven as I

say so at this festive time—having a depth of about $6\frac{1}{2}$ inches; take out the bottom and refix it an inch and a half higher up, filling up any cavities that may remain around it, or up the original closing at the side, with hot glue. Cotton wadding forced in firmly with a small chisel is also a very good substitute. Around the circumference at the bottom of the drum cut out three arched sections, rising an inch for each apex, leaving between each about 3 inches of the base as supports. Opposite each other and inside of the drum fix two upright pieces of deal $4\frac{1}{2}$ inches long, and four-eighths by three-eighths of an inch in substance, with very small screws from the outside. Then cut a circular piece from out of the lid of a papered hat-box, about one-eighth of an inch smaller in circumference than the inside of the drum, and cut two opposite niches or grooves out of it, so that it may relieve itself well of the uprights. Fasten with tin-tacks two thin strips of deal, an inch apart, parallel and across, to prevent the floater from warping. Tack on the under side, at right angles, four pieces of a cork cut three-eighths of an inch thick, and with a bare bodkin or knitting-needle heated red-hot pierce a quantity of holes over its whole surface, and form one central hole half an inch in diameter, and secure therein a strip of bended zinc to answer as a handle, and the bees will be enabled, through the agency of the central hole and the corks below, to clear away the food from the bottom. This self-acting float will effectually secure the bees from death by immersion from the downward progress of the food; and it will be a rare sight to watch them at an evening feast of this kind. It is gluttony perfectly typified, though really to be understood in the opposite sense as regards our little insect friends.

When I find occasion to feed in autumn I proceed as follows:—I cut a strip of thick cotton wadding about 2 feet 6 inches long by 2 inches broad, and encircle it upon the top towards the outside circumference of the hive, then quietly and quickly as possible ply-up the central piece of plaited straw, place upon the hive a narrow deal fillet half an inch wider than the hole, and immediately lay on the adapting-board; the fillet refuses the bees admittance under the board, for the central parts of straw hives are generally become sunken a little more or less—circumstances which I submit to, as I prefer my hives to be made of straw throughout. Now place the feeder upon the board over the orifice, and a large bell propagating-glass over the feeder; then, with a goose's wing—which should always be at hand in all bee-operations—waft off the bees that may be running about on the board, and cover the glass with a super-over-hive, and surmount with a milk-pan, which will bear the hive down upon the board, which presses the cotton wadding into the irregularities of the surface of the stock-hive, defying earwigs, woodlice, and all other insect depredators, which are sure to be on the alert on these occasions. In the course of about half an hour's time listen, and you will hear a sound as of a resounding sea.

My drum-feeder holds 8 lbs. of food. I supply it to the hive about six P.M. in August and at five P.M. if in October (I prefer August), and by nine next morning the bees have generally stored the food and mostly forsaken the feeder by about eleven A.M. I then, if it is in October, spread a piece of matting before the hive, remove the pans, super-hive, and glass and feeder; and when no more food is to be given, I place the feeder on the matting. I consider my stock-hives should weigh 30 lbs. each in the latter end of August. Then take off adapting-board, wadding, and fillet, secure the piece of plaited straw over the hole with three or four slender nails, waft off any stray bees with the wing, and replace the milk-pan on the stock-hive. With the wing I then move off what bees there are loitering about the feeder on to the piece of matting, because, in October especially, the ground is apt to be damp and cold, and the bees, either from being gorged or taken suddenly from the warm temperature of the hive, when they are brushed to the cold ground become numbed, and never rise more; whereas, alighting upon the dry matting, they recover and return to their hive. When more food is to be given, then I merely replace the bell-glass, super-hive, and pan, and return the feeder replenished in the evening.

Never feed them during the daytime. It incites the bees to roosting and to gadding about, and, what is worse, their portal is left in a great measure unguarded, which awakens in their neighbours their never-failing picking, and stealing, and fighting propensities. The bee food which I invariably make use of is composed in proportions of 1 lb. of loaf sugar, $\frac{1}{2}$ lb. of honey,

and $\frac{1}{2}$ pint of water to be dissolved in a stew-pan over a clear fire.

In conclusion, I will observe, that a quarter-of-a-peck measure is more likely to be on the premises than a fig-drum, which was the case with me last autumn, so I merely with some tacks as small as possible, fastened two parallel uprights inside the measure, driving the tacks from within in this instance. These formed a float after the manner above stated. I fashioned a wooden ferrule out of a lath an inch broad, cut away three three-inch segments, half an inch deep, out of its circumference, and placed the measure plished with food upon it, upon the adapting-board over the hive. Nothing could answer better, and it is a simpler matter of construction even than the drum, whilst the quarter-peck remains good for its other legitimate purposes all the year round.—UPWARDS AND ONWARDS.

SALT FOR PIGS.

I THINK Mr. Preston has not solved the question. An overdose of salt is a poison to all animals, and pigs are frequently so poisoned to my knowledge by bacon-brine. That they thrive at sea is because they get, in medical verbiage, *quantum salis*, and that much improves most animals—not, I think, excepting dogs, but those animals most that are subject to internal parasites.

I give my horse and my dogs salt as an alternative, nor do I forget myself or my friends; many of whom, especially of the poorer order, have expressed their satisfaction at a benefit from so easy a remedy as a spoonful of salt in a morning before breakfast, and continued daily for weeks if necessary.—QUARTZ.

[We think our correspondent has shot by-side the mark. The question raised was not whether an excess of salt is fatal to pigs, but whether in moderate quantity it is injurious or beneficial. Bacon-brine may be fatal, but fatal because it contains saltpetre, which is poisonous even in small quantities to other animals. We will add the following which came to us by the same post that brought the letter from "QUARTZ":—

"I HAVE seen salt given on a small scale to pigs, but with beneficial results, as they seemed to relish their food better with it, and it had no ill effect upon them. I fancy if those worthy folks who say it is injurious were to use it themselves at the same rate they have given it to their pigs, it would very likely disagree with them too, as the effects they ascribe to it are just what one might expect from an over-dose.—A. R.]"

OUR LETTER BOX.

BLACK BANTAMS AT DARLINGTON.—We have received an explanatory letter from Mr. Munn, but too late for insertion this week.

BLACK BANTAMS.—Will the "WILTSHIRE RECTOR," who wrote in this Journal of December 23 "A Plea for Bantams," inform "C. G." where she can obtain a cock and two hens of the pure Black Bantam breed, and at what price?

DEAD SILVER-SPANGLED HAMBURG PULLETS (*Gallus*).—The crops of both the birds you sent were quite empty, and there were no stones in the gizzard. Your feeding is good, and yet your birds look and dissect as if they died of atrophy. There was no appearance of the gizzard having had anything to do for days. Has their roosting-place any kind of flooring? Constant chill might have to do with it. We doubt not bread steeped in strong ale would save them, and, in the event of another case, advise you to try it freely.

LAYING AGE OF FOWLS (*A. B. M.*).—Pullets only lay in the winter; Cochins and Brahmas, hatched in May, will lay in the winter; Dorkings and Spanish, hatched in February, will also do so. It may be taken as a rule that Cochins and Brahmas lay when from twenty to twenty-four weeks old, and others at thirty to thirty-six weeks old.

BANTAMS IN A GARDEN (*Museum*).—We have often had occasion to notice that Bantams, and especially Sebright Bantams, do little harm in a garden.

CORAL (*Idem*).—There are naturally three kinds—white, red, and black. We never heard of the colours of the two last-named being whitened, for the colouring pervades the whole substance.

BUCKWHEAT FOR POULTRY (*A Subscriber*).—Buckwheat is good for change. Pheasants are not very fond of it, Partridges are; but neither care much for it in confinement. If a piece of it be grown, Partridges will feed on the stubble till all be ploughed-up.

PIGEONS (*Idem*).—Tiles make very good Pigeon-nests, as they do not harbour vermin like straw and wood. The shapes most adapted are those that are ridged and curved towards the edges. We have known flower-pot saucers used. We do not know where you can meet with Blue Rocks for your dove-cote.

DOE RABBITS EATING THEIR YOUNG ONES (*F. C.*).—Generally speaking only very young does eat their young ones. If they are kept quite away from the buck, are kept quiet, have a private place in which to kindle, and are plentifully supplied with every sort of green meat, especially parsley, they seldom eat their young.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JANUARY 13-19, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
13	Tu	Primrose flowers.	29.692-29.596	51-35	W.	.12	m. h.	m. h.	m. h.		m. s.	13
14	W	Bajerus b. 1677. B.	29.720-29.452	44-31	N.E.	.03	4 48	14 4	17 2	24	8 54	14
15	Th	Snowdrop flowers.	29.940-29.374	43-25	N.E.	—	3 8	16 4	17 3	25	9 16	15
16	F	Crowfoot flowers.	30.038-29.979	41-20	S.E.	—	2 8	17 4	33 3	25	9 38	15
17	S	Cuspar Bauhin b. 1560. B.	30.005-29.997	35-19	S.E.	—	1 8	19 4	47 4	26	9 59	16
18	SUN	2 SUNDAY AFTER EPIPHANY.	29.971-29.960	36-17	S.E.	—	0 8	20 4	53 5	27	10 19	17
19	M	J. Amman d. 1741. B.	29.900-29.766	29-24	S.E.	—	VII 7	22 4	46 6	28	10 39	18
							58	7	24 4	sets	10 58	19

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 42.2° and 30.6° respectively. The greatest heat, 60°, occurred on the 19th, in 1823; and the lowest cold, 4½° below zero on the 19th, in 1833. During the period 147 days were fine, and on 105 rain fell.

THE PERSIAN RANUNCULUS:

A PLEA ON ITS BEHALF:



HAVE often wondered why this very beautiful flower is not more largely cultivated than it is. My own earliest associations as a lover of flowers are connected with it. I could not have been more than twelve years old when a schoolfellow took me to see his uncle's garden in the neighbourhood of Dublin. It

was a small plot, just such as many of those suburban residences have attached to them; and would, with its straight narrow beds, have given a landscape-gardener a fit of the blues. But the old gentleman's *spécialité* was the Persian Ranunculus. He was no florist; but being, I believe, somehow connected in business matters with Holland, had managed to bring together a very nice collection. Whether it was that my eyes were more easily satisfied then than they are now, or that the garden was well adapted for them, I know not; but although some thirty years and more have rolled over my head since then, and many a scene of far greater importance has passed from my memory, I see those beds of Ranunculus as clearly now as if they were veritably in bloom before my eyes. All shades of colour I recollect were there—ashy grey and purplish-black, brilliant yellows and glowing crimson, all kinds of spotted and edged varieties, and, I can verily say, such a bed I have never seen since; and if I have ever given the readers of THE JOURNAL OF HORTICULTURE any information that has been of use or stirred-up their flower-loving spirit, that bed of Ranunculus was the exciting cause of all my after-taste. It will hardly be wondered at that it should be a favourite flower, and that I should feel surprised at its not being more widely cultivated. Years after this a well-executed plate in the "Florists' Journal" stirred-up the old love which, perhaps, other plants had taken the place of, and I then set about growing them. My garden at that time was on a cliff overhanging the sea, exposed to every wind that blew; and yet, by dint of contrivance and perseverance I had a very nice bloom. Since then under varying circumstances I have cultivated them. Five or six years ago I had a beauteous bed of them in my garden here; but since that time my success has not been such as I had then. As next month is the best period for planting them I have thought that, perhaps, a few observations on them now might not be out of place.

I believe that one great reason for their being, comparatively speaking, so little grown, is that they are somewhat capricious in their blooming. But this applies mainly to the old Dutch varieties, many of which, such

as those that I saw in my boyish days, are perhaps now extinct; but during the last thirty years several very successful florists have been engaged in raising seedlings in this country, the two most celebrated being Mr. George Lightbody, of Falkirk, and Mr. Carey Tyso, of Wallingford, Berks. These seedlings are remarkable for their vigour of growth, great size, and above all, comparative certainty of bloom; and when we recollect that a flower whose home is the Levant has been acclimatised and made to seed in the cold uncongenial quarters of North Britain, we might naturally expect that it had acquired some hardness of constitution. So in truth it has; and at the same time one cannot help admiring the zeal and perseverance of our northern florists, who, nothing daunted by frost and snow, have in so many florists' flowers taken the lead of us in the south. To any one beginning their cultivation, I do not think I could give better advice than, Put yourselves into Mr. Lightbody's or Mr. Tyso's hands; tell them what you want, and you may rely on being well served. I know more of Mr. Lightbody's flowers than I do of Mr. Tyso's, and can unquestionably recommend them; and at the end of this short paper have given the names of a few I know to be good.

SOIL AND SITUATION.

A good deal has been said on this subject; and the great expense which is recommended by many growers has oftentimes, I am persuaded, frightened florists from attempting them. It is, I dare say, true that they can be best grown by taking out the soil of the bed in the autumn, and placing a good layer of well-decomposed cowdung about 6 inches below the surface: but this is not necessary. Any good rich garden soil, but without fresh manure, is suitable for them. When the natural soil is not good the beds must be made for them and filled-up with a mixture of loam, manure, and leaf mould, all well rotted together. As the Ranunculus delights in moisture an arid soil or a sunny situation does not suit them so well; but neither must the bed be placed under the drip of trees. In my own garden this is one of the great difficulties I have to contend with in the successful cultivation of the flower. We receive so much sun that it counterbalances the natural good condition of the soil.

MANAGEMENT.

The beds should be prepared in autumn, so that they need not be much disturbed in the spring when planting takes place. Should the weather be frosty it is a good plan to throw the surface up in small ridges to sweeten (as this winter we have not had a night's frost here, that has been impossible); and when the time for planting arrives the bed should simply be raked down smooth. It is a great mistake to raise the beds; they should be not more than an inch above the level of the walks. The 12th of February is the day which I have always fixed for planting; and in the successful execution of this depends half the future results. The bed being made quite flat, drills should be drawn about 5 inches from one another. In the bottom of this drill some white

Reigate sand should be sown; and the tubers then planted about 5 inches apart, and not more or less than $1\frac{1}{2}$ inch below the surface. The drills should then be covered in and the bed raked smooth. If the season should be a dry one they will require watering; but it is always best to do this between the rows, and not all over the bed. When the flower-buds begin to show colour it is time to have an awning of some sort ready to stretch over them, in order to prevent the effects of the scorching sun and heavy rains. Although the plant is so dwarf in habit it is not well to have the cover too low down, as this is apt to draw the plants; $2\frac{1}{2}$ feet at the sides, and about 4 feet in the centre is the correct height. After the bloom is over the covering should be taken off on all fine days, as it is very important to get the tubers up in a good state of preservation. If taken up too soon their vigour is spoilt; if left too long they are apt to sprout again, which is more injurious still. If the weather be very moist it is better to loosen the tubers by putting the trowel into the soil near them; but if dry this will not be necessary. When dried, put them into paper bags and keep them in a dry place.

CHOICE OF SORTS.

OLD DUTCH VARIETIES.

Angoulême	Feu Eclatante	Cillet Parfait
Apollo	Grande Monarque	Passe Niobe
Beauté Behemoth	Hercules	Reine de Portugal
Bishop van Lima	Jaune en Pompadore	Roi des Renoncules
Bouquet Sanspareil	Manteau Noir	Téméraire
Carlos	Mélange des Beautés	Tippoo Saib
Condorcet	Naxara	Voctonmox
Cossack	Ceil Noir	Voltaire
Fête Nocturne		

LIGHTBODY'S SEEDLINGS.

Admiral Home	Earl of Errol	Miriam
Brilliant	Erskine	Niobe
Chatterton	Goethe	Sir J. de Grème
Commodore Napier	Grace Darling	Sir J. Dombain
Countess of Eglinton	John Joyce	Sir H. Pottinger
Dean Swift	John Waterston	Splendour
Don Roderick	Lady Sale	Talisman
Dr. Channing	Larne	Ten Founder
Dr. Niel	Magellan	William Penn

TYSO'S SEEDLINGS.

Aurelia	Exhibitor	Premier
Auriga	Felix	Reformation
Cathcart	Hamlet	Saladin
Claimant	Jubal	Tubal
Creon	Melanethon	Virtuosa
Delictus	Miriam	Waldensia
Dr. Horner	Orsippus	Xerxes
Edgar	Paxos	Zwingle

I have only given the names of a few. Those in list No. 1 are mainly selfs; those in 2 and 3 spotted and edged. In all three classes there are a great many more equally as good, I dare say; but I have named those I know best.—D., *Deal*.

THE FRENCH FOUNTAINS—LIBRARY AT THE HORTICULTURAL SOCIETY.

NEW AND OLD CROCUSES.

In the monthly summary which closed the last year and in the last volume of the "Proceedings" of the Royal Horticultural Society, it is stated that the French Fountains (the worse luck) are now definitively abandoned, the amount subscribed having proved insufficient for the purpose, and the instructions of the subscribers with regard to the disposal of their subscriptions are now being taken. So far as is yet known, it would appear that the subscribers will unanimously direct them to be applied in the purchase of works of art for the decoration of the garden. Notwithstanding that the fountains are now out of question, "the subscription list will still be kept open, as it is understood that a number of the Fellows who would have subscribed for bronzes or general decorations have refrained from subscribing so long as the purchase of the fountains was in doubt."

There is much more than at first appears in that paragraph. The subscribers will most certainly not direct their money to be laid out in bronzes unanimously, and I for one do hereby protest against any more bronzes or brass, except the brass bands, for the new garden, until we have as good a library as the want of brass deprived us of on the fall and folly in Regent Street. But let bygones be bygones, and let us all join in the one pursuit which of all others is the most likely to contribute to the progress of the cultivators of the science and practice of gardening—the endeavour to place as good a skeleton of a garden and scientific

library at South Kensington as there is there now of what a town garden should be, and which embraces the period when the sister arts went hand in hand together with the science and art of gardening. I can very well understand the feeling in the Council of the Society on the subject of a library—they all feel our want of it as much as any of us; and they must also know the force of the feeling which the selling of the old library raised against the body. But let us all agree to forget what is not agreeable, and let us set on foot the really agreeable idea that ours will be the best library of the kind in the kingdom at some future time, if we set about it now with the French fountains' subscription sure in hand.

The best book I had for the last three months was the book on Crocuses; but the Crocuses themselves were still better. From the last day of September to the first day of January I have not been without a bloom of Crocus, or a pot of Crocuses in bloom, outside of the window-sill facing the south, and all with four kinds of wild Crocuses; and the last of them promises to run on to near the end of January. Well, then, what could be nicer than that for four of the dullest months? for, if October should be fine and fresh, still it is possible to keep back the October-flowering Crocuses to the beginning of November by keeping the pots dry a month longer, or by not potting the bulbs so soon by a month. Speciosus was the first to bloom with me, and it was noticed at the time as so much like Leucocoryne xxioides in the light blue streaky colour. A botanical clergyman from the country wrote to me to say his speciosus was very different from the one I mentioned; and so it was, for his sort is Parkinson's pyrenaëus, which is the same as Sir E. Smith's nudiflorus, and is first called speciosus in the Supplement to "English Botany," vol. ii., fig. 2752.

This pyrenaëus of Parkinson and nudiflorus and speciosus of Smith is the same as the Crocus which is so abundant in the meadows at Nottingham. My speciosus is the true one, and was so named in the "Botanical Magazine," 3861, by Bieberstein, after whom the new *Cerastium Biebersteini* is called. He was a Russian botanist.

My present new-year bloomer looked so much like the true versicolor as to put me in the dumps about it, when the flower-buds made their first appearance about the middle of December. It is the Crocus Imperatorius of Herbert in the "Botanical Magazine," 3871, and the C. Imperati of Tenore, "Botanical Register," 1993. It is a native of Monte Pollino in Calabria, and farther south to the very spot where Garibaldi received the ball into his ankle. There are six blooms of it now open before me as I write this, and I see nine more coming in different stages, so that I shall be sure to have one bloom of it at least to the very last day of January, if not well on in February, as some more flower-buds may yet appear from among the foliage, which in this kind becomes 2 or 3 inches long before the flower-buds come up. In the bud this beautiful Crocus is a light yellow, or straw colour, streaked with purple-feathered stripes on the sepals. The inside of the sepals and both sides of the petals are of a rich violet colour (saturate violaceo); the bottom of the flower is smooth, and of an orange colour, like the eye in the breed of versicolor, and the size as large as that of Prince Albert. Altogether it is a very desirable Crocus coming naturally in the dead of winter, besides reminding one of a host of similar kinds, which might be within our reach if we once adopted the notion of cultivating a selection of them.

I am indebted to the kindness of the king of cross-breeders for them all, and his kinds came quite true to name. One of them, for which he had no name, and which he received from Dr. Herbert's brother, is the next on my list, and the third which bloomed with me. It is *odorus*, a lovely light blue flower all over, with a yellow bottom, and it bloomed for six weeks from the end of October, and is a very sweet-scented flower. It is the Crocus longiflorus of Rafinesque, an Italian botanist; but the name *odorus* was previously applied to it by another Italian, Bivona Bernardi, and there is a figure of it in the "Botanical Register" for 1844 (3, fig. 4), under the name longiflorus, together with that of another variety of it (fig. 5), which is a native of Malta.

The fourth kind of my stock is byzantinus, the oldest of them all, and one of Parkinson's Crocuses; it is also the most curious of all the Crocuses, and had several names—as banaticus, by M. Gay, of Paris; speciosus, of Reichenbach; and iridiflorus, of Dr. Heuffel; but Parkinson's name, byzantinus, having had the priority, is the right one. Before the flower opens one might be excused for taking it to be speciosus, the colours being much

the same. When it was fully open Dr. Heuffel was very near the mark in naming it *iridiflorus*; and M. Gay, in the "Bulletin de Férussac," having had it from the Banat of Hungary, and probably through Dr. Heuffel or Visiani, without a name, was not so far out either in naming it *banaticus*; but Parkinson had it through Constantinople, so it may have a long hilly range from the Banat eastwards.

Well, the oldest Crocus is still the most striking and the most singular flower of them all, and mine possessed a most singular feature which has not been mentioned by any author as far as I know. All my flowers, nine or ten, had four large spreading sepals, the first true irid flower I had ever seen with so many, and some had four petals, and some only the usual number—three. These petals are of a deeper blue than the sepals, and only about one-half their size; they stand apart in the centre, erect and not spreading, and at a short distance look very much like some Iris. Two good gardeners mistook my flowers for Iris. This and the Cloth of Silver of Parkinson had both been long lost until they were introduced again by Dr. Herbert, and many such, as it would appear, only to be lost again after his own loss to scientific gardening.

The twelve kinds I had from the far north are all growing, but none of them are autumnal or winter bloomers; and they may, probably, turn out to be merely garden seedlings, for I have no names yet for them, and I am afraid the names have been lost. But the old story again. I want more kinds of Crocuses, and I want no seedling Crocus but Mary Queen of Scots, which Mr. W. Paul exhibited the spring before last before the Floral Committee, and which I booked as so much larger than Sir Walter Scott. Any kinds of Crocus to bloom from September to February I want, except *speciosus*, *odorus*, *byzantinus*, and *Imperatoni*, and any kind I may obtain shall not be lost again for the next generation after me; but I would give a fair price for any authentic kind of the race of autumn bloomers.

To conclude this part of the subject I would remark, that the three weeks next ensuing is the best time of the whole year to pot Crocuses from the open border, so as to have them without much forcing a month or six weeks earlier than they will be from the open ground. If the patches or rows of Crocuses have been down twelve months, or a number of years, the best part of their roots is made before the middle of January, and the leaves are nearly on the surface by this time, in such a mild season as this, and it is under these conditions that all the difficulties of learning to force Crocuses vanish in practice. No one, therefore, need wait one day longer at trying his or her maiden effort at "early forcing," a subject which is music to the ears of an old gardener. So much is it so in my own instance, that the fire for keeping the seedlings on the move is constantly referred to as "the early forcing," while the fire to keep off the frost is of little or no account. But when I was in the very full of it, and had all sorts of bulbs and of Crocuses in forcing, I never missed lifting a certain number of patches about this time in addition; and with the same treatment as with forcing Asparagus I could always reckon on as early a bloom and a better one than that from potting dried bulbs after the middle or end of October. A mild, moist bottom heat was maintained, and the lights were slid down all day and tilted at night; but on the window-sill this style of early forcing is almost as good as any.

D. BEATON.

MELON CULTURE.

"F. B." has a greenhouse and a two-light frame, the command of plenty of stable manure, a good stiff loam in his kitchen garden, leaf mould, and access to road-scrappings, and he asks if with these, being quite a novice, whether he can grow Melons; and, if he can, how and where he should raise the plants.

Our reply may be useful to many similarly placed.

FIRST, FOR MODERATELY EARLY MELONS.—Begin now, and having obtained two good cartloads of stable manure, throw it together into a heap, mixing the short and the long regularly together, and watering if the straw part is very dry, and beating it down if there is much straw matter in it. Make the heap in a square shape in preference to a cone. When finished, throw a barrowload or two of long litter over it, to cause it to heat sooner and more regularly. In ten days or so you will see the heat steaming nicely. Remove the straw covering and lay it carefully aside, and turn the whole heap over carefully, placing the top at the bottom, and the outsides in the middle, shaking

it all regularly, and watering only with the rose of a pot where the manure seems dried and parched, and cover all over again with the long litter. In about the same time, less or more according to the weather, turn the heap again and cover as before, and most likely, in a week or so, the manure will be sweet and fit for your bed. Whilst these preparations are being made, take half a dozen barrowloads of your garden loam, a spit below the surface would be best, and put it in any place where it can be well aired and dried. Place also along with it a barrowload of road-scrappings, if free from weeds and very fresh leaves; and one barrowload of well-rotted sweet leaf mould. These will be quite sufficient for forming a ridge or two mounds in the centre of your bed. Whilst this is going on, the dung from the stables will have accumulated to a load or two—say two loads. Then fix upon a site for your two-light frame, and choose one where moisture will not accumulate, and mark out a piece of ground, at least 18 inches longer and 18 inches wider than the size of your frame. Shake on this the long unsweetened dung from the stables, keeping the sides and ends plumb or perpendicular, and then build upon that the fine sweetened dung you have been preparing. If your frame is rather shallow, you may make the sides in which the frame stands higher than the interior of the bed by 6 to 12 inches, and that will give you more room for soil, for the top of the soil should not be nearer the glass than from 15 to 18 inches. The soil should not be less in depth than from 15 to 18 inches. Put on the frame as soon as the bed has been made. If the bed has been equally beaten it will sink equally; but it is as well to wait a few days to see, and let the heat rise nicely and regularly. Then you may put in your aired soil, either as a ridge along the middle of the bed, or as a mound of two or three barrowloads in the centre of each light. As soon as this soil is warm, and from the clear condensed drops of water on the sash-bara and the sweet smell of the bed you can reckon that all is safe, you turn out your plants, either along the bed or two or three in the centre of each light. These plants we are supposing that you beg or borrow from some neighbouring gardener; if not, then sow as soon as the bed is up, pot-off, and plant-out as above; but thus you will lose much time. By the above mode, and using the stable manure for linings when the heat declines, you may have two crops of Melons from that frame before the nights become very cold in the autumn.

As soon as the roots fill the ridge or hills, the frame may be partly or wholly filled with mould, using well-aired soil round the hills, and the rather stiff soil of your garden trodden firm for the rest, and putting no manure with it unless it is very poor indeed. In the directions in late Numbers to which you allude, we do not agree either in the mode of stopping detailed, or in the rich soil stated to have been used. But the reasons for this have been repeatedly given, and you must exercise your own judgment.

You seem anxious to do everything for your plants yourself, and therefore we may state that you may raise your own plants in the greenhouse, and sow now, if you would make a small wooden hot-water box for yourself—say 2 feet square and 18 inches deep, or, better still, 15 inches in front and 20 inches at back. Fasten a tin, or plate-iron bottom across the box, 6 inches above the lower bottom, and on that plate place some rough sand, &c., for the pots to stand upon. The six-inch space below to be filled with a box, or drawer of zinc, tin, or plate-iron, which you can empty or fill at pleasure. From 3 to 4 inches of hot water—say twice in the twenty-four hours, would, with a covering of the glass lid at night, give plenty of heat for the Melons, and interfere nothing with the plants in the greenhouse, as a little more air could easily be given just opposite the box. The temperature of the box should range from 65° to 70°, with a rise of from 10°, 15°, or 20° in sunshine.

The bottom temperature of the dung-bed should average 80°, the atmospheric temperature of the bed at night may range from 60° to 65°; if as much as 70° leave a little air on. In favourable weather give air early in the morning, and then, if the sun raises the atmospheric heat to 80° or 85°, it will be all the better. Shading should not be resorted to unless in sudden changes. Much has lately been said as to watering.

A SECOND MODE FOR SECURING ONE GOOD CROP WITH LITTLE TROUBLE.—Secure plants by the second or third week in May, either by begging, buying, or raising them in the greenhouse as above described, sowing the seeds in the box in the first week of April. Choose an open place for the box, excavate the earth some 9 inches deep, placing the earth round,

so that the hollowed space will be about 18 inches deep. Place a few barrowloads of litter on the bottom, and then two cartloads of dung, thrown together about the 1st of April, but not so much sweetened as in the first case. Get that into the hole by the 1st of May, put your frame on with the earth close to the outsides, allow the heat to rise, level the surface nicely, cover with 15 inches of your stiff loam, let the sun have full access during the day, and cover up at night, and as soon as the soil from heat and sun is about 80° turn out your plants, tread the soil firm, and attend to air-giving, &c., as necessary; in fact, the training and air-giving will be pretty nearly all the trouble. The dung may be used less sweet, because covering the bed all over with soil, and tramping it firm, especially near the sides, will prevent all steam from rising. To prevent cracking, keep the surface loose for half an inch or so in depth.

A THIRD AND EASIER MODE.—Set your frame full south, raise it up behind, so as to give the glass roof an angle of 70° instead of 80°, which is the usual slope for a frame. The raising the ground for the frame to stand on will do all that; then remove some 6 inches or more of the natural soil, and supply with fresh incorporated with the old. About the middle of May keep the frame shut, and cover-up with mat or tarpaulin, in cold nights. The soil inside will soon become warm from the sun alone; turn the soil frequently, so that it may be heated all through, and by the 8th or 10th of June turn out the Melon plants that had been raised and hardened-off by degrees in the greenhouse. By such means, in the climate of Reading, where you reside, you may obtain fine Melons through the autumn.

THE FOURTH PLAN is what you should try if you wish to astonish your friends by giving them plenty of Melons as proofs of your good will. Your greenhouse is 30 by 18 feet; you do not say whether you have Vines in it or not, we presume not. You do not say where your heating medium is; we shall, for argument's sake, presume it is near the front. Well, in this case we would sow the seeds in the first or second week in April, even if you should want a second hot-water box for the seedlings, which, in this case, should be potted singly. By the 1st of June all the hardy greenhouse plants may be moved out of doors to a sheltered place. Such plants as Azaleas, Epacris, and even Camellias may be left at the back, a little shaded until they have formed their wood, and then be hardened-off by degrees. If floral decoration were deemed necessary, then grow such annuals as Cockscombs (common and feathered), Portulacas, &c., and such tuberous-rooted plants as Gloxinias and Achimenes, which will keep in a cool dry state in winter. Then we would have twelve large pots, set near or over the heating medium in front of the house, each pot about 15 inches in diameter at least, well drained, and filled to within an inch of the top with your good loamy soil, with nothing in it but a little sweet leaf mould. When the soil is warmed, turn out a stiff stout single plant in the centre of the large pot, water and shade a little for a few days until it is growing freely, and fasten the shoot to a string or rod, keeping it always, at the least, 15 inches from the glass. We prefer, for this work, that each plant should have only one shoot or stem, and that this should be a secondary and not the primary shoot of the plant. This was all recently explained, but we will recapitulate thus far. The primary shoot is the leading upright shoot of the seedling which the Melon sends up as naturally as the Oak. But we do not let this grow; on the contrary, as soon as it can be seen after two or three rough leaves are visible, the point is nipped-out with a penknife. This, of course, seems to arrest the growth of the plant for a little; but we have an object in view. Ere long two or three incipient shoots will appear instead of one. All are nipped-out with the point of a penknife when very small, except one, and this one we train and grow on from the pot, until, from the space at our command, the shoot is from 3 to 6 feet in length before stopping it at all. From every leaf of that shoot, or nearly so, at the point where the leaf joins the stem, would come first a little bud and then a shoot, what we think was previously called a tertiary shoot; and if we nipped-out the point of our main shoot, to throw strength into these side tertiary ones, almost every one of them would show fruit. We do not stop the main secondary stem so soon, and we pick-out every one of these incipient buds or shoots for more than half the length of what we intend the stem to be, because we do not wish our space to be filled with small shoots and foliage, and because we wish our plant to be strong and vigorous before any fruit shows. For this purpose, when we

do stop the point of our stem, we leave from six and onwards of these young shoots in the axils of the leaves unpicked-out, and these then come strong, show fruit boldly, and then themselves are stopped one joint beyond the fruit. So much for the front of the house. But it would be just as easy to cover the whole house with Melons, by having another range of pots on the stage at the back, which would give 9 feet of roof for each row, or a row might be placed likewise in the middle of the house, which, in addition to the front glass if there is any, and the length of the upright glass, will give fully 6 feet of roof for each set of Melon plants.

Be it clearly understood that, in disbudbing as above recommended, care should be taken that the older leaves on the stem should not be injured. All that is necessary to turn such a greenhouse into a first-rate melonry, is the removing all plants that extra heat would injure, and then using as much fire heat as would secure an average temperature of from 65° to 70°. If a little air is left on at night, and more given early in the morning, the plants will stand a rise of 10° to 15° from sun heat without injury; 60° would do at night if the roots had bottom heat, but without that, and as the pots will cool by radiation and evaporation, we would, in such cases, approve of from 65° to 70°. We know that fruit thus obtained will, in general, be much superior to those raised on dung-beds. We forgot to mention that, in trying Melons without any hot dung below the soil, the frame should be shut up early in the afternoon to enclose sun heat, and great care should be taken not to overwater, and at any rate to prevent the surface being deluged or sloppy. A few open drain tiles set upright, furnished with plugs, will enable you to keep the soil beneath moist enough, whilst the surface is dry. A flooring of slates over the soil would also absorb and then radiate the heat. These remarks apply to your specific circumstances, and we shall be glad both to give more details if necessary, and to hear of your success. R. FISH.

APRICOTS IN ORCHARD-HOUSES.

It is very satisfactory to be able to put "CONSTANT SUBSCRIBER" in the way of succeeding with Apricots under glass.

My trees have generally been too much crowded with fruit for some years past, and particularly in 1860 and 1861; but in 1862, in spite of what I thought to be good management, there was a failure, and on my large trees I had but half a crop, or barely that. Now I knew, when the trees were in blossom in April, that the dull, still, cloudy, moist weather was most unfavourable to the pollen being, as it should be, dry and dusty, and so I gave a portion of air to the house, even when the nights were frosty, so as to prevent stagnation. In spite, however, of all I did, the blossoms dropped by thousands, leaving but a scanty crop of fruit. I did not, as usual with us frail mortals, "do as I ought to have done;" I ought, on observing such unfavourable weather, to have had a pan of charcoal lighted at 9 A.M., have kept all the doors and ventilators open, so as to have brought on active currents of dry air, which, as is well known, a bright fire always does. The pan should have been replenished with fresh charcoal at 7 P.M., and this kept burning all night, with all the ventilators open. Three or four days of such treatment would have made nearly every blossom set. Dry, briskly-moving air, no matter if cold, as long as the thermometer does not descend below 27°, is most necessary to the setting of Apricot blossoms. Just let us imagine the hills of the Caucasus, "the mountains there to the top being covered with Apricot trees;" and let us picture to ourselves a March day there, when the Apricot trees are in the full glory of their blossoming—a dry, cold, biting wind, with a bright sun, and the air full of the impalpable pollen dust. The same, or nearly the same atmospherical state must exist on the northern coast of Africa and the slopes of the Atlas, where the Apricot is so abundant. Well, is it not our duty to give our Apricot trees, when in full bloom, a humble imitation of the climates in which they succeed so well?

As to the effects of frost on the blossoms of Apricot trees, it is, when the trees are under glass, of much less consequence than moist stagnant air, and I can illustrate this very pointedly. Last July I happened to be looking into one of my hedge-houses, those most useful structures. In one of them, with a Beech hedge for its back wall, about 8 feet in height, and the same for its front wall, about 4 feet high, I found some bushes of Moorpark Apricots in 13-inch pots: these were placed there for the pur-

pose of producing ripe shoots early in the season for budding. The borders in this house in spring were dust, for they had had no water for six months. To my surprise I found these trees full of fruit, so much so that a tree only 18 inches high had on it two dozen. This led me to look into the matter so as to account for their fertility, as I felt assured that they must have stood in a very cold, windy, dry place; as the trees had had but little water, owing to these houses being a long way from the house, and had thus been partially overlooked; and as it was thought necessary to give them a soaking of water only when they commenced growing, the fruit being a matter of no import, for the houses were open to the numerous boys working in the grounds.

I found on referring to my journal the following memoranda taken when the Apricot trees were in full bloom in April last:—"April 12th, cold and dry. 13th, ditto; frost severe, thermometer registered 24°. 15th, frost severe; thermometer at 23°." Now, in these hedge-houses the temperature in a frosty night is never more than 2° above that in the open air, and often only 1°; so that we have Apricot blossoms in a dry airy place sustaining at least 7° of frost without injury. I need not enlarge on this simple fact—it bears out all that I have ever said about the necessity of giving Apricot trees while in bloom constant air and abundance of it. A neighbour of mine is now so satisfied of this, that he declares his potted Apricot trees shall be placed out of doors daily in dry weather while they are blossoming, and even all night if the weather be mild, removing them to the house only when the nights are frosty. Apricot trees in orchard-houses, as soon as cultivators will cease to take "too much care" by keeping their houses closed while the trees are in bloom, will be held in higher estimation than many other kinds of fruit—they are so beautiful in their blossoms and foliage, and their fruit is of such high excellence.

There is something droll in my friend Pearson recommending us to water the blossoms. If we wish the dust to fly we do not water our roads: *ergo*, if we wish the pollen to fly and "be as dust" we must not water the flowers of our Apricot trees. But doubtless he has some good reason to urge for the practice.

In referring to the habitats of the Apricot I omitted to mention that Dr. Hooker, when travelling in the lower ranges of the Himalayas, and Morecroft, who travelled to a great extent in the far east, found Apricots so abundant in the hilly districts as to form an article of food for the inhabitants. Reasoning from analogy, and from my experience here, I am inclined to dry culture for the Apricot under glass.—THOS. RIVERS.

CHRYSANTHEMUMS.

In the excellent article on Chrysanthemums by "D., Deal," is a sentence which, if not corrected, would lead many to suppose that the Chrysanthemum was not thought very highly of by the patrons of floriculture. The sentence I mean does not emanate from "D." himself, but is what he quotes from the "Proceedings of the Royal Horticultural Society," that because so few persons went to the Gardens on that day the wisdom of not having a Chrysanthemum show was patent.

I, as an exhibitor, can only say there were three or four times as many visitors as I expected to see, thinking that a dull November day would only draw the members of the Committee and the few exhibitors. I was, however, agreeably surprised, and the interest taken in the few plants and cut flowers was evident to any observer. At large exhibitions I have never noticed the flowers and plants more severely criticised, the ladies especially taking great interest in them and carefully inspecting the whole. The writer of the sentence in question evidently drew a wrong conclusion in comparing this small meeting with an exhibition.

I would ask, Was not the Fruit and Chrysanthemum Exhibition of November, 1861, a decided success? I, as well as many others who grow Chrysanthemums, object most strenuously to the sentence quoted, and if not contradicted it might lead many persons to suppose that a Chrysanthemum Exhibition is not a source of attraction, or that the growth of this popular flower is declining; whereas every year brings an accession of cultivators and exhibitors. The Crystal Palace exhibitions of this flower were always well attended, taking the season into consideration, and I think, in a pecuniary point of view, were not unsuccessful. In the present year I hope to see both the

Royal Horticultural Society and the Crystal Palace Company again holding Chrysanthemum Exhibitions. If they do not, Stoke Newington will still be loyal and hold its seventeenth annual Exhibition, and this is still equal to any.—H. W.

STRENGTH OF LIQUID MANURE.

I SHOULD feel much obliged, and I think many of your readers would be so too, by some correct and minute information as to the use of liquid manure, say for pot Vines. All agree that to use it too strong is an evil, and if too weak it may be of no appreciable advantage.

Now, taking Peruvian guano as a manure of most general suitability and known average strength, what quantity of guano should be dissolved (so far as it will dissolve) in four gallons of water to make a solution sufficiently weak to use freely twice a-week? Or, would it be better to use a still weaker solution three times a-week? in either case allowing the intermediate waterings to be from soft water.

For convenience last summer I stirred-up 6 lbs. of guano in about a hogshead of soft water, diluting the solution as I used it. But during the warm weather a considerable fermentation took place, which must have materially altered the chemical conditions of the various constituents of the guano; but whether for the better or the worse I cannot tell, and should like to know. I think this is worth consideration, for it is certainly much more convenient to use a bowlful of a strong solution with each pot of water at the time of using than to be continually mixing-up fresh parcels of guano and water.—PAMPINUS.

[The subject has received a considerable amount of attention. For four gallons of water we should consider three ounces of guano quite strong enough for pot Vines. In fact, we would prefer two ounces. If mixed long beforehand, the barrel should be covered. You will find varying the manure useful—as half a bushel of soot to a barrel, a bushel of sheep-droppings to a barrel, and if fermented all the better.]

For Vines in pots we know no artificial manure more easily applicable than superphosphate of lime. You may put an ounce of this over the surface of the pot and pour the water over it, and put another ounce on in a fortnight: it will do no harm. The same quantity of guano put on the surface-soil of a pot would be apt to kill the plant. Except when we use guano, which we rather prefer keeping dry before using it, we prefer all other manures to be in solution for some time, and to reduce them in strength as we use them.]

HORTICULTURAL SHOWS IN THE NORTH OF IRELAND.

ALL horticultural exhibitions when well conducted by those who take upon themselves such responsibility, are a source of pleasure, not only to those who pay their admission fee at the entrance gate and are exclusively bent upon sight-seeing, but also to the gardener, who with all his care, toil, and anxiety, has watched the progress of his plants and fruit for many long anxious weeks. He is most delighted, not only in viewing his own productions, but likewise the productions of his more successful neighbour, whose success only stimulates him to further exertions. But when I assert that these exhibitions are frequently conducted (in this part) on principles which in the end must prove most prejudicial to their success, I am giving an opinion founded upon observation.

These exhibitions ought to be of an open character, and not conducted, as they too frequently are, upon a principle of exclusiveness. I will briefly illustrate this by examples from this district.

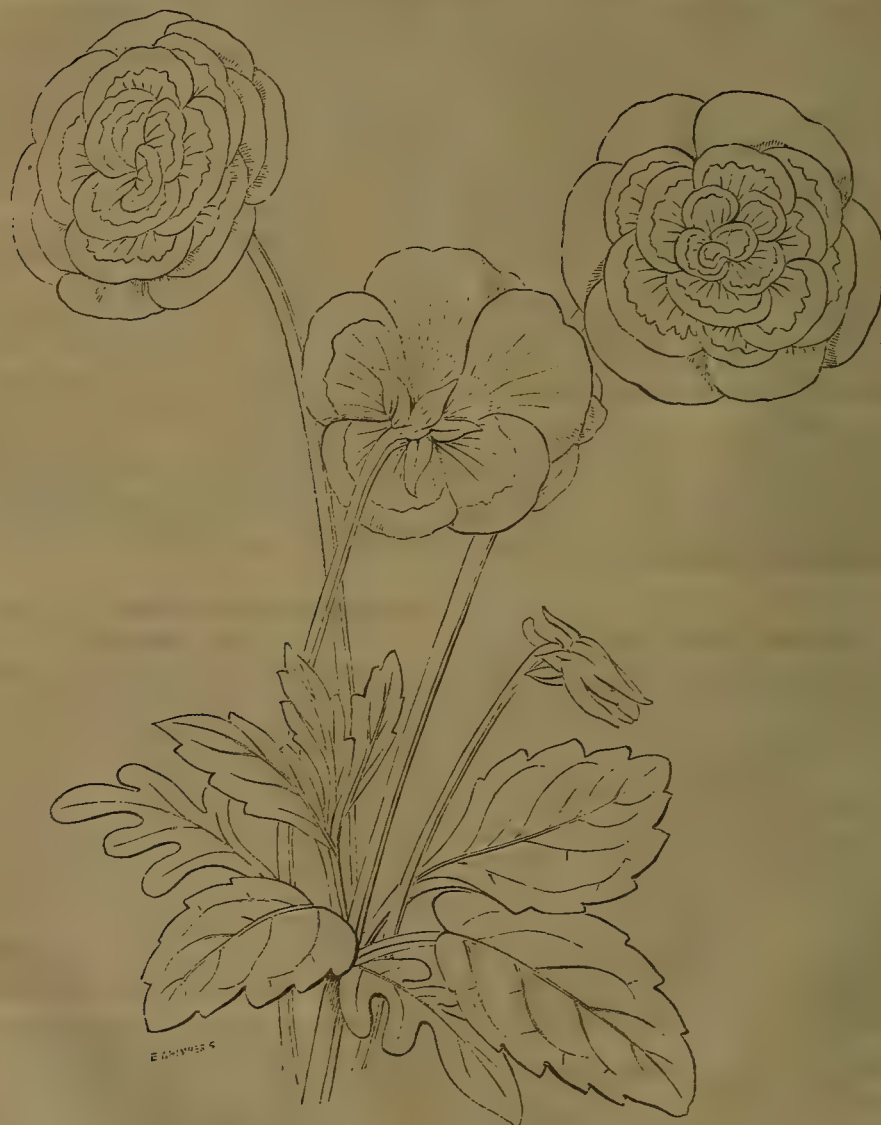
Being desirous of advancing the interests of horticulture in my immediate neighbourhood, I wrote to a friend in the town where the Show was held, desiring him to pay the annual subscription requisite to entitle me to exhibit a collection of fruit, which my noble employer most willingly allowed me to take. The friend in question took my subscription to the Secretary, who refused me permission to exhibit my employer's property in my own name, as he (my employer) was not a regular subscriber. When I heard the decision of the Committee I thought such proceedings most unfair; but when I examined the report of the Show a short time afterwards in the newspapers, I was not at all surprised at my exclusion, for two of the Committee-men (gentlemen's gardeners), received nearly the whole of the

principal prizes! Now, the advancement of horticulture must be quite foreign to this Society's views, otherwise such a display would have never occurred.

At another Show nearer home, in which my noble employer takes a most lively interest, and to which he desired me to send all I possibly could to make the Exhibition as attractive as possible, I forwarded a rather extensive collection of both plants and fruit, naturally expecting that I should be allowed to compete in all the fruit classes; but I was doomed to disappointment in only being allowed to take one prize in a class: however inferior any dish or collection might be, that actually was awarded the second prize, in comparison to those against them. I consider this a most obnoxious rule, and the sooner it is expunged from the Society's schedule the better for its interests.

This same Society had a rule to the effect that all prize fruit was to be the property of the Society when the Exhibition closed; but what gardener, I should like to know, would venture to exhibit his employer's produce with such an outrageous rule as this in force? Why not claim all the prize plants? the Committee would then be able to furnish their greenhouses economically. The worthy Secretary of this Society does not consider the gardener in the least entitled to the puny awards in the shape of prizes; but forwards them all to the gardener's employer, thus leaving the exhibitor no alternative but to pay all the expenses out of his own pocket, which is no trifle when some of the exhibitors have to convey their plants a long distance by water, and be from home three days and nights. I wonder how you southerners would endure such mismanagement as this.—A PRACTICAL GARDENER, Ireland.

BEATON'S GOOD-GRACIOUS DOUBLE BEDDING PANSY.



THE long-lost Double Purple Pansy has been frequently alluded to in our columns, and was figured and described in the "Florist and Pomologist" of December last; but that our readers may form a correct idea of this highly ornamental plant, we have now the pleasure of giving them a representation of its appearance. The stock of this plant is in the hands of Messrs. Carter and Co., of Holborn, who have given it the name of Beaton's

Good-Gracious Double Bedding Pansy, by which appellation we trust it will become as generally known as it deserves. The outer or guard petals of the flowers are about the size of a good Pansy, and the inner gradually diminish towards the centre, forming a double flower. There can be no question that it will form a valuable plant for beds and borders, more especially as we understand that it has proved a profuse bloomer.

LENGTH OF HOT-WATER PIPING REQUIRED FOR HEATING.

CAN you kindly inform me whether two lengths of three-inch pipe (each 9 feet), one flow, and one return, would heat a small pit for stove plants; the pit being 10 feet long, 6 feet wide, 4 feet high in front, 6 feet high at back? And how much larger could I have the pit, supposing four-inch pipes to be used?—A. B. C.

[If you use no covering for the glass you need about 40 feet at least of piping for such a stove-pit; if four-inch pipes the least you could have would be about 30 feet.]

A FEW WORDS TO YOUNG GARDENERS ON EDUCATION AND ATTENTION.

If gardeners are still wanting in intelligence, it is not because enough has not lately been said of our evident deficiencies, of the knowledge we ought to possess, and of the education which the young especially ought to receive. It is quite possible to have even too much of a good thing. A man may starve in the midst of plenty. The labourer, who uses well his few volumes may have more intellect and wisdom than his neighbour who possesses a large library. The very range and the extent of accomplishments and attainments may so dwarf the intellect as to render it unfit to concentrate its force on any definite object: nay, the very extent of the fields traversed, if we have not obtained enough of knowledge to show us our own great deficiencies, will have a tendency to make us self-sufficient, and lead us to look over or condemn the simpler elements of knowledge. Talk of gardening being a learned profession as much as you please; make that learning if you will the groundwork for the social elevation of gardeners, but forget not that some acquaintance with the higher departments of science will prove no compensation for the want of unremitting attention, the want of concentration of purpose to devise, and of activity of hands and feet to execute. That concentration is seldom thoroughly gained without a substantial grounding in the simpler elements.

I was much pleased in reading the other day some statements made by Lord Littleton, when distributing the awards at the Midland Institute at Birmingham, as, after reviewing the studies of the candidates in languages, mathematics, the sciences, natural philosophy, &c., his lordship expressed a hope that such an extended range would not prove detrimental to the acquisition of the very humble but very useful arts of spelling and writing correctly; and added, to strain the intellectual faculties of youth is like beating out gold into gold-leaf—in gaining a larger surface strength and solidity are lost. So much was this the case, that it is no uncommon thing to find young men crammed to examination-point in many of the learned ologies, and who yet fail to succeed because unable to read, and spell, and write their own language with anything like ease, correctness, and elegance.

I would respectfully leave it to those who may have even better opportunities than myself of judging, to say whether, as respects these rudimentary elements of education, a number of young gardeners have not great reason to improve themselves, and that before troubling themselves much with higher branches of knowledge, which, without a good grounding in these elements, cannot prove to them sources of much pleasure or profit. So much do I feel on this matter, that could my opinion have been of any influence, I would have joined that party in our parliament which lately insisted that the obtaining of public money for assisting education, should be greatly dependant on the proved proficiency attained by the pupils in reading, writing, and arithmetic. I should have done this, not only because these fundamental elements of a good education were often comparatively neglected from a preference being given to what was more showy and superficial, but also because I have a strong conviction that, to preserve the sturdy independence of the English character, the assistance given to education should be confined to these elements, and then allowing the parent or the pupil to pay for themselves for whatever is wanted in addition; and this all the more, because equally convinced that the girl and boy that can read, and write, and cipher well, hold in their own hands the keys that will enable them, if disposed, to open all the locks to the great temple of knowledge.

There can be no question, that gardening as an art and a science has made great improvement in this country, and chiefly

through the intelligence and industry of gardeners. It is just as unquestionable that with a few exceptions there has been no corresponding improvement in the social position of gardeners. This matter has been pretty well ventilated in previous volumes; and though pressed to suggest some remedy by many who feel they are sinking deeper in a quagmire of difficulty and find they cannot help themselves, I candidly own I can see no effectual remedy.

A thorough grounding in the profession—a certificate of apprenticeship, journeymanship, and foremanship have been insisted on; and also examination by competent persons, and diplomas to be given according to supposed proficiency, have all been recommended as means for elevating the profession, and all have more or less been tried by leading nurserymen, the Horticultural Society, &c., and with little or no avail. In this free country we cannot prevent any man calling himself a gardener; nor can any restraint be put upon a gentleman as to who he is to employ. It matters not, though the employer suffers greatly in the end, and his cheap servant turns out a very expensive one. The very frequency of such cases glut the market, keeps the apparent supply above the demand, keeps wages down to mere existence-point, and causes many a good gardener, whose services otherwise would be eagerly sought for at home, to starve out of place, or resort to emigration as his only remedy. And yet with all this nurserymen tell me, that at times when a first-rate man is wanted, they are frequently at their wits' end where to find him!

It may be a satisfaction to our young aspiring friends to let them know as a great secret how it is that professional and general intelligence, united with propriety of conduct, is not more generally relied upon as a test of fitness. It is simply this, that these qualifications alone will not make a good servant. I am as much convinced as I ever was, that the more intelligent a workman is the more likely will he be to do his work well. But I am more convinced than I was at one time, that the extra success obtained by a gardener of extended intelligence, is not quite so much owing to the general knowledge thus gained as to a generalising power, which enables him to bring that knowledge to bear upon practical details, and to give an earnest "attention" and constant watchfulness over the minutiae of these details. No acquaintance with "ologies and graphys" will ever compensate for inattention to these details: hence, the plain plodding man whose knowledge is limited, but thorough as far it goes, and who has a veneration for attention to minutiae, will in general excel the philosopher who thinks such minutiae beneath his notice.

Some time ago, I unwillingly overheard two gentlemen speaking about their gardeners. Said A, "What a philosopher of a gardener you have! he seems to know everything." "Philosopher, indeed!" replied B, "I tell you, I never did such a foolish thing as let old C leave me, and just for a few pounds more wages. Then everything was so nice, and the man so modest and retiring, and respectful to everybody, though somewhat independent withal; and when I had occasion to write to him, he sent me such nice letters, confined so scrupulously to the matters in hand, and so well written that I used to let my visitors see them, and that is how he had so many of my friends after him when there was an inkling he was going to leave me. But for shame, I would give anything to have him back again. You see how I am served, flower-beds weedy and half empty, scarcely anything for the table from out-doors or in-doors; and instead, bushels of philosophy, giving me learned lectures on the causes of failure—failure coming after failure to furnish materials for a fresh lecture, as if my table were to be supplied with long learned words instead of fruit and vegetables; and, then, with all this parade of entomological, and phytological, and physiological, and other jaw-breaking 'logicals,' the few letters I have had show too well he never learned to put a single sentence together in decent English. And as for reading, when, because I had forgot my spectacles, I asked him to read a handbill, I was obliged to shut my ears and run! Philosophy, indeed! He is a crammer, has had his head crammed with a lot of big words, and these I must eat if I like, instead of vegetables or fruit."

Why allude to such a dialogue that might have been heard last autumn beneath the arcades of Kensington? Not to depreciate knowledge—not to damp the aspiration of the young gardener to study and render himself as intelligent as he can—but to show clearly that, as a gardener, this knowledge will be of little use to him unless combined with attention to the smallest practical details; nay, further, that unless this attention is seen to be generally associated with great intelligence,

that intelligence alone will not become as many desire it to be—a test of fitness and suitability on which employers may depend.

So much has of late years been said on the education of gardeners—so many are the sarcasms levelled at us because we do not know this, or are ignorant of that, that really it is high time not to attempt to draw the winds out of the sails of knowledge, but quietly to inquire whether these sails are distended with the breezes of Common Sense, or the sweet zephyrs of Romance. When knowledge in such circumstances is looked upon, not only as a power which will ever bring its own reward of pure and elevated pleasure, but is also regarded in its utilitarian aspects, Common Sense comes in and asks, What temporal benefits, what increase of comfort, what social respectability are to be gained by this increased intelligence? Are we to go to the afflicting details that come before the Committee of the “Benevolent,” or to the still more harrowing details that come so often before respectable nurserymen, and those gardeners somewhat comfortable in their position, for a too true answer to the inquiry? As an act of honesty, I would wish to strip gardening as a trade of much of that mere feeling of romantic interest which lingers around it, and advise young men to look at it in its stern realities.

Through that feeling of romance, and the statements so frequently made as to the necessity of a first-rate education, many well-educated youths enter upon gardening with the full confidence that they will gain some of the few prizes that are to be obtained. And so no doubt they would if they waited for them, and combined their extra intelligence with attention to practical details, as some of our best men will tell you, but with the addition that they saw, when too late, they might have taken their education to a better market. I know myself estimable young men, who, when the romance of the affair was gone, and when they calculated the smallness of the returns in wages they were likely to receive even if successful, have entered upon a fresh employment after being several years at gardening. I have also met with many other highly-educated youths who would have made a good show at an examination table, and yet did not succeed extra well as gardeners, merely because they trusted too much to their intelligence, and considered attention to practical details a secondary matter. Of course there is no absolute or natural necessity for this, quite the reverse; but that the circumstances too often exist admits not of a doubt.

Unpleasantness, too, is often the result. A gardener will often speak highly of the general conduct and the polished education of a youth, and yet own that, for attention to a specific charge, or performing the common operations of gardening, he is not so much to be depended on as a common garden labourer. Misconceptions are thus too apt to exist, the polished young gardener imagining that his chief duty is to observe and note as much as he can, with as little soiling of his fingers as possible; and the worthy, old-fashioned gardener, considering that he would neither be honest to the young man himself, nor yet faithful to his own employer if he did not insist on good workmanship and attention, and those who take such highly-educated youths as apprentices or improvers, would do them an act of kindness by giving them a good spell at first among the stokeholes and dunghoops. If they could not stand that without wincing, the sooner they entered upon a more congenial employment the better.

Upon the whole, then, unless there is a particular inclination in that direction, a thorough resolution to make nothing of difficulties, to pay attention to all minutiae, combined with the resolve, as matters now are, to be satisfied with very small remuneration for their talents, I would advise highly-educated youths to take their talents to a better-paying market than gardening. And I do this the more, not because valuing intelligence less as the great means of improvement, but because the field would then be more open for improving the position of those in a humbler class of society, and who had received only the elements of a common education, but who resolved that no want of attention to minutiae, no want of self-denial and earnest attention to study and self-culture, should unfit them for holding a good position in their profession, and a higher position in society than their fathers did. With but few exceptions, from such a class the most successful, the most contented, and, so far as knowledge was brought to bear on professional subjects, the most intelligent gardeners have come.

I allude to these latter ideas, because there is a vast difference

between the comfort enjoyed by a man who feels he has improved his social position, and that of a man who feels he is falling lower and lower, and has never obtained what he considers his deserts. The youngest, if they have followed me, will be in no danger of considering with a friend of mine, that I am at all opposed to highly-educated gardeners, though I insist so much on attention to trifles. “Is it likely,” said he, “that we should have had such instructive writing from Donald Beaton if he had been a stranger to a classical education?” “Is it likely that your old friend Mr. D. should have taken such few steps from the bothie at S. to the superintendence of a gentleman’s large estate, being equally at home in the building of a mansion, and the erection of a conservatory, but for his good education?” “But, for the same advantages, is it likely we should have been honoured with a Sir Joseph Paxton?” and so on with many of the chiefs in the profession.

In all such cases I am not so far a-field. The education did something; the concentrated attention to everything entrusted to their care, the self-denial, and the never-intermitted self-culture, did far more. Mr. Beaton has told us something of his young days in the Highlands, and his troubles in parsing Virgil, &c., and we know something of his never-ceasing self-denial and self-culture in the Lowlands. To such studies, far more than to his Latin, was he indebted for being able to write the reviews of Herbert’s “Amaryllidaceae,” and become a foremost man ever since. The same talents, energies, and self-denial, would have led to success in any field of science and of commerce; and, in the latter, wealth and position might have been gained had such been objects of ambition. I rather think that Mr. D. did not know much of the classics, but he had received a good sound education—could take plans, draw, and reason out a problem of Euclid. With such advantages was he contented? No! never was there a more zealous student. I often regret I was not influenced more by his example in that respect. It is a great mistake in young men to imagine that they must obtain influence and patronage to succeed. I do not suppose that Mr. D., even in the common acceptance of the word, solicited such influence, but he secured it from those with whom he came in contact by his never-ceasing efforts at self-culture, his readiness to oblige, his courtesy of manners, and his faithful attention to everything confided to his care.

Of the younger days of our honoured knight in gardening I know little for certain. There are many current reports in Hertfordshire as to how he worked and studied. Some time ago I chronicled seeing the bed on which he slept in the bothie at Woodhall. There may be something of popular exaggeration, but that distinctly points to Sir Joseph as a self-made man—the result chiefly of long-continued self-culture.

To highly-educated youths who resolve upon gardening, notwithstanding the plain truths I have placed before them, I would say, If you wish to be successful consider no attention and no trifles beneath your notice. To the larger class, who think little except of six o’clock, and how they may get away and spend their evenings in what they call pleasure, it would be useless to say one word. To those from humbler positions, who have mastered merely the simpler elements of education, I would say, Combine strict attention to details, with constant efforts to improve yourselves in intelligence; and thus, not only widen the sources of pleasure, but secure the ability to retain a good situation when you obtain one. A few simple hints on this self-culture may come before us at a future opportunity.—R. FISH.

THE KEEPING PROPERTIES OF PEARS THIS SEASON.

YOUR correspondent “E. B.,” of Deal, in THE JOURNAL OF HORTICULTURE, page 795, puts a question about the keeping of Pears, and you desire to have information on the subject. If, therefore, you deem the following observations useful I shall feel pleased in having made them.

The spring of 1862 gave as great a promise of an abundant Pear crop as I ever saw. My trees, standard and pyramid, were a sheet of bloom, and great were the expectations of pomologists—in fact, I calculated on being able to show two hundred sorts; but, alas! the rains began to be over-abundant, and the temperature kept so low, that soon the rosy blossom began to pale and fade and to show the white feather—a sure sign that the root-action was not going on as it should have done. The consequence was a weakly set of fruit, which progressed slowly, until

about the size of pigeons' eggs, when a sudden fall of the thermometer nearly denuded the trees. Yet hope was strong; and although a thin crop was left I expected, with a rise of temperature, to have come out strong with those that were left. But one mishap very often follows another; and whilst I was in London in the beginning of August seeing the great Exhibition, a hurricane tore over London, and was felt over a wide zone of country. Even our beautiful Somerset felt the "chilly blast;" and when I reached home, oh! my poor Pears! there they lay in their glory, and there I left them for the birds. A few only now remained, and it was evident that I could do nothing in the show way, so I was content to watch what were left, and to note their daily progress.

The *récolte* came, and I found many sorts had braved every danger, and were brought safe into port. How they have fared since I may now tell. Altogether I saved specimens of about 150 kinds, but many of these were small. The following sorts bore well, and have generally kept well:—

Bergamot, Easter.—Now ripe, two to three months before its usual time; buttery and delicious.

Bergamot, Gansel's (from Pyramid).—First-rate flavour, and kept two months longer than usual.

Beurré Berckmans (Pyramid).—A beautiful and delicious little Pear, just done, Christmas-eve, its usual time.

Beurré Bose (Pyramid).—Large, rich, aromatic, and delicious; just now finished—Christmas, two months later than usual.

Beurré d'Arenberg (Pyramid).—Melting, buttery, and very rich. Ripe end of November, two months before its usual time.

Beurré de Capiaumont (Pyramid).—An abundant crop, fine flavour, and first-rate this season here. Once in two or three years, in my soil, it is worthless. Ripe about its usual time, October.

Beurré Diel.—In my soil always small, and not often second-rate. This season better than usual, and some of the fruit have kept till now. Speaking generally, in this neighbourhood this kind is magnificent.

Beurré de Rance seems keeping well, and I suppose will do so till May by its appearance.

Beurré Duhaume, Beurré Easter, Beurré Gris d'Hiver, and Beurré Langelier have all kept well till now, and have been and are excellent.

Beurré Navez and Beurré Superfin.—The first bore an immense crop, which was very good, and ripened as usual in September; the second was delicious, kept sound, and was ripe in the end of September.

Bishop's Thumb.—A heavy crop. Has been in use during November until now, and very good. Some still remaining.

Bon Chrétien, Williams'.—Was very fine, large, and good. Ripe as usual. One of the hardest Pears known.

Broompark has kept well, and is just beginning to turn ripe. First-rate from my soil.

Calebasse.—Heavy crop. Kept sound, and ripened as usual in October.

Calebasse Grosse.—Very large, and with me very fine; this season extra fine.

Catinka.—A delicious and first-rate fruit here; is just done, its usual time.

Chaumontel.—Not yet come in; seems to be keeping well, beyond the usual time here.

Citron des Carmes.—Bore abundantly this season, and was ripe from the tree in August.

Colmar Neill.—Not good this season; just done two months after its usual time.

Comte de Flandre.—First-rate; has kept good till now, December 31st.

Comte de Lamy.—Immense crop, of which the birds had the greatest share: they know what is good. What they left ripened in November; extra delicious.

Conseiller de la Cour.—A splendid Pear in my soil, and the tree a great bearer, especially upon the Quince. Good till end of November.

Delices d'Hardenpont (Belgique), and Delices de Jodoigne have both been excellent, and have kept over their usual time.

De Trousseau.—Has been excellent here, and it ripened in the beginning of December.

Doyenné Boussoch.—Delicious, and ripened a week after it was gathered, October 18th.

Doyenné Defais and Doyenné Goubault.—Both ripened in December, and are first-rate sorts.

Duchesse de Mars.—Small here this season, but a good crop.

No signs of ripening yet; usual time November and December Delicious.

Duchesse d'Orleans.—Was fine in October, its usual time.

Easter Bergamot and Easter Beurré.—Now both ripe and delicious, the last especially melting and fine. Usual time February.

Figue de Naples.—Not yet ripe; usual time November.

Fondante d'Automne.—Abundant crop, excellent, and ripened in October; later than usual.

Fondante des Charneux and Fondante de Noël.—Both first-rate. The first ripened December 4th; the last is not yet ready. Usual time Christmas—one of the best of Pears.

Glou Morceau.—Delicious, and ripened in November; a month sooner than usual.

Grand Soleil.—Large and excellent. Ripe end of November, about its usual time.

Hacon's Incomparable.—Was ripe in November and very good.

Jamiette.—Not yet ripe.

Laure de Glymes.—First-rate. Ripened in November; usual time October.

Louise Bonne of Jersey.—Ripened about a fortnight later than usual.

Marie Louise.—Kept good until November, and was then excellent.

Monarch.—Bore well this season. Fruit not yet ripe, but looks sound and good.

Napoléon.—Bore well, but the fruit was ripe from the tree in October.

Ne Plus Meuris.—Just beginning to turn soft. Bore well.

Paradise d'Automne and Passe Colmar.—Both good, and just becoming ripe.

Rondelet.—A delicious sort. Ripened in the middle of November.

Seckle.—Some of the fruit kept till November, and was delicious.

Sieulle.—A fine aromatic fruit; kept sound till November.

Thompson's.—This fine Pear ripened in October, a month earlier than usual.

Urbaniste.—This delicious Pear ripened early in October, its proper time.

Van Aesche.—A rich and fine Pear; kept sound till the middle of December.

Vicar of Winkfield.—Is now in eating, and is this season a nice juicy fruit; generally only fit for the cook.

Winter Nelis.—Whilst writing these notes, I have just had some in to taste this delicious and first-rate Christmas fruit. It will continue good for another fortnight.

Zéphirin Grégoire.—This rich, sugary, and delicious Pear ripened here a month ago, being nearly two months earlier than it does sometimes.

Besides those enumerated above, I have still some others not yet ripe; but they are, generally small and inferior to what they should be, and it would not be doing them justice to say anything about them this season, which has not been at all a propitious one. May we hope that the one just arriving may prove more genial? Again, our fruit trees are covered with buds, I think to even a greater extent than last season; and looking over my collection of Pears, three hundred sorts, to-day (January 1), on purpose to report to you the prospects of the coming season, I find very few indeed that are entirely devoid of fruit-buds, and the Cherries, Plums, and Apples in the orchards here look promising indeed.

We have now had four good cider years following, and there is every appearance of having a fifth. I think we must thank the wind for this, as it thinned the crops liberally, giving two advantages to the orchardists—viz., a good crop of finer and better-matured fruit, and also a prospect of a crop the following year, from which I think that "those who run may read" a lesson. Were we to attend more to the careful thinning of our fruits, our trees would not suffer by overbearing, and the quality of the fruit would be much improved, and its keeping properties lengthened-out. Does a Grape-grower expect, when he leaves all his bunches on and his berries also, as is nearly always the case with out-door Grapes, to obtain a crop the next year? We all know that Grape-growing requires extra thinning, and who will say that the same rule ought not to be applied to all kinds of fruit? Were proper thinning and careful root-culture more attended to, we should find the keeping qualities of most fruits much improved.—J. SCOTT, *Merriott, Somerset.*

CULTURE OF THE GENUS BOSSIAEA.

THE BOSSIAEAS are a family of leguminous plants, chiefly from Australia and Swan River, some of them remarkable for a singularly elegant habit of growth, and the whole of them for the very profuse manner in which their flowers are produced. Unfortunately most of them produce flowers nearly of the same colour, and hence they are not so much cultivated in collections as they otherwise would be; but some of the species being remarkably distinct in foliage and habit, and forming, when properly grown, very elegant specimens, are worthy of considerably more attention than they are receiving at the present time. Their cultivation is very simple; the secret of producing fine specimens being that of laying a good foundation, for without that it will be impossible to produce a fine plant. To this end procure, when purchasing plants, the strongest you can meet with in the nurseries. When we say the strongest, we do not mean plants 12 or 18 inches in height with a few branches, but short bushy fellows; and if the collar, or part of the plant just above the soil, is as thick as your finger, and the plant is healthy, and the roots vigorous, you may make sure you have a good plant. It may be remarked *en passant* that the preceding criterion of a good plant may be taken as a safe guide in purchasing plants of all kinds, more especially hardwooded plants; for if they are dwarf and healthy, and have, moreover, strong stems, you may make sure that whether they be large or small, they have been well propagated, and well cared for afterwards.

Having procured such, take some good fibrous turfy peat, such as those who understand plant-growing procure from Wimbledon Common, and after removing the inert soil, or sand, as it is sometimes called, from the bottom, and the coarse vegetable matter from the upper surface, break it into small pieces, and then pass every part through a half-inch sieve; to four parts of this, add one of nice mellow, fibrous, turfy loam, two of gritty sand, and one of charcoal and potsherds, broken to the size of hazel nuts; mix these intimately together, and then they are ready for use. Next procure some clean porous six or eight-inch pots, and drain them thoroughly. If the plants are such as we have advised you to purchase, place the strongest in the largest pots, and the weak ones in the six-inch size, taking care to fit the soil nicely about the roots, and to make it tolerably firm; indeed, if the compost is dry you may make it as firm as you can, without resorting to the ramming process of our forefathers.

The plants should then be placed in a pit or frame, where they can be kept tolerably warm and moist, shading them in mid-day until they begin to grow, and taking care to syringe them and shut them up early every sunny afternoon. Thus treated, they will progress very rapidly, and some of them will probably require a second shift towards September. If a frame or pit cannot be spared to place them in, make the nearest approximation you can to the conditions required, to promote free growth in the greenhouse, by keeping a part of it close; or place the plants in a vinery, or other forcing-house, where the temperature is not too high, and where plenty of air can be admitted in favourable weather. It will be necessary to curb redundant growth by timely stopping the strongest shoots, to make them branch; but in the cultivation of Bossiaeas, unless a branch takes a decided lead, nothing will be gained by stopping it, as they generally, at least the majority of the kinds, produce secondary or lateral shoots in tolerable abundance.



Bossiaea tenuicaulis.

When they are first potted it will be necessary to water the plants with caution, but after they are in free growth, and are well rooted, a good soaking occasionally with weak liquid manure, such as is produced by steeping a bushel of sheep's-dung in a hogshead of soft water, to which a peck of soot and a quart of guano may be added, will be of considerable service. This, diluted with an equal quantity of clear water, will be found excellent for plants of all kinds, providing its use is guided by a practical eye, and too much is not given at one time. As a general rule, if the soil is good, liquid manure should never be used until the pots are tolerably well filled with roots, and under no circumstances to a plant that is in delicate health. To expect to invigorate a sickly plant by giving it liquid manure

would be as wise as to expect to sober an intoxicated man by administering alcoholic drinks: therefore recollect in plant-cultivation, overfeeding is worse than under-feeding, for you may keep a plant alive on short commons, but once gorge the system, and a plethoric habit is induced, and all healthy action is at an end. We make these remarks thus plainly, not only as applicable to this tribe of plants, but to all plants, and to all cultivation: therefore inexperienced persons will act wisely to make a note of it for their future guidance. All the plants belonging to this genus are very subject to the attacks of the red spider, so it will be well to look them over occasionally, and after syringing, if they are affected, dust them over with sulphur, and let it remain for a few days, when it may be washed off again.

Bossiaeas may be propagated by cuttings of the half-ripened wood; but, as they produce seeds very readily, it is seldom necessary to increase them by cuttings. The seed should be sown directly it is ripe in July, and the plants be nursed in small pots through the winter.

In the second year, the established plants may be grown, after they have bloomed, in the open air, taking the same precautions as before directed as to insects, &c., and potting them when necessary.

The following are distinct and pretty species; the engraving represents *B. tenuicaulis*:—

B. cordifolia.—A dwarf-spreading shrub, with terete villous branches, and cordate acute, nearly sessile leaves. The yellow flowers are

marked at the base of the standard with a purple circle, and have a dark purple keel. New Holland. Introduced 1824. Flowers in April and May.

B. disticha.—A dwarf shrub, rather erect in habit, with slender branches, and two-ranked ovate-obtuse leaves. The flowers are showy, on stalks longer than the leaves; the standard is pale yellow, with a spot of deeper yellow at the base, and bordered with red—the wings stained with red at the base. Flowers from April to October. Swan River. Introduced 1838. A variety of this is grown in gardens under the name of *B. disticha plumosa*.

B. ensata.—A singular-looking upright species, with compressed linear leafless branches, toothed along the edges, and bearing the flowers from the notches. The flowers are yellow; the base and back of the standard brownish-orange purple; the keel brownish-purple. Flowers from May to July. New Holland. Introduced in 1825.

B. linophylla.—A small, slender, erect-growing shrub, with compressed branches, bearing linear leaves with the edges recurved. The flowers are yellow, the standard veined at th

THE
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NATURAL HISTORY.

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

THE FRUIT AND KITCHEN GARDENS, by Mr. J. Robson, Gardener to Viscount Holmesdale, M.P., Linton Park; and Mr. T. Weaver, Gardener to the Warden of Winchester College.

THE FLOWER GARDEN, by Mr. D. Beaton, late Gardener to Sir W. Middleton, Bart., Shrubland Park.

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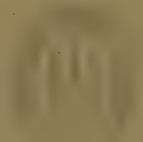
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TO OUR READERS.

WE know of one who would not have on the parlour chimney-shelf a dial with a second's hand, because it made him see and feel how life lessens, as it were, drop by drop. What he would have said, or how he would have felt, if he had to write these Prefaces surpasses our power of surmise, for they at once tell of six months gone—and how quickly gone!

Grateful are we to record that truth, for miserable is he over whom time passes on heavily. But no such weight has been upon us: no day has been long enough or slow enough—each day's evening seemed to arrive before its morning had passed into noontide.

This was not because there were no sorrows around us; for we have had by our desk refugees from the once United States, telling of homes crushed, and of brother in arms against brother in fratricidal and suicidal war: we have had a blast from that war among our own homes, and our pages have told of one small passage in the wide and deep amount of privation and sorrow which it whelmed over our cotton districts. Death has not been less frequent than usual in his visits among those whose aid we had; nor have we found jealousies less jaundiced, nor envyings less dettractive.

But we have had compensations for all these ills. We were able to give occupation to the unemployed and to point out to others those who deserved assistance. When a chasm occurred among our friends others stepped forward to render the vacancy less observable; and as for the jealous and the envious, we had no leisure for being inconvenienced by them.

Thus have we passed on through 1862; and over its close we will inscribe the hope that from its days our readers, as well as ourselves, have passed on into 1863 wiser, happier, wealthier—wealthier not merely in this world's gear. May its harvest of wisdom, happiness, and wealth be even more abundant than that yielded by its predecessor; and we will include in that prayerful hope our brethren across the Atlantic. Many of our readers are there, and they may accept from us as truth that great is the delusion which suggests that “Britishers wish nothing but evil to America.” If that fiendish desire actuated our countrymen, they would not so earnestly hope that the internecine war waging there may speedily cease.

Heartily do we join in that hope—nay, more, it is the most prominent in a cluster of good hopes, including one for the well-being and well-doing of each and all of our contributors, and another for the vigour and endurance of those so abundantly recording themselves as our “Constant Readers.” May they all be evergreens, and then our concluding wish will be gratified, for we shall all have

A HAPPY NEW YEAR!

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base with red, and the wings and keel marked with the same colour. Flowers from May to September. New Holland. Introduced in 1803.

B. rhombifolia.—A small-spreading shrub, with the branches terete, and the branchlets compressed, bearing rhomboidal-orbicular leaves, somewhat emarginate and mucronate. The flowers are yellow: the standard with a zonate red mark at the base, the base of the wings red, and the keel brownish-

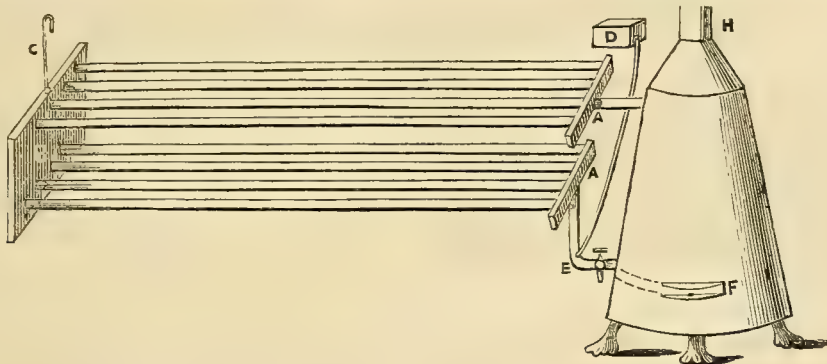
purple. Flowers from April to June. New Holland. Introduced in 1822.

B. tenuicaulis.—A pretty twiggy shrub, with round, slender, straggling branches, and sub-sessile ovate-subacute mucronulate leaves. The flowers are yellow; the standard marked with a zonate blotch of red at the base, the wings streaked with red, the keel dark red. Flowers in April and May. Van Dieman's Land. Introduced in 1836.—(*Gardeners' Mag. of Botany*.)

GAS-HEATED BOILER.

HAVING seen many inquiries made about which is the best way of heating small greenhouses, I send you a sketch of my small patent gas boiler. It is formed of seven tubes, with a ring of jets of gas beneath. There are seven small burners, one fixed exactly under the centre of each tube. The boiler is made of copper, and is 12 inches high by 9 inches in diameter; and

the water space is between the tubes upon the same principle as the locomotive engines. The whole is enclosed in a sheet-iron case just the shape of the boiler, made to fix on the top and extending down the side nearly to the bottom. This case confines the heat to the outside of the boiler, and to prevent the cold air getting between this casing and the boiler a flange is fixed.



In the above drawing, A A are two cast-iron boxes about 9 inches long, and of just sufficient width and depth to admit of an inch-bore pipe being screwed into them. The top one, of course, forms the flow and the bottom one the return. B is another box which answers for the return; C is a small air-tube; D the supply-cistern, which may be placed wherever most convenient so long as it is above the highest point of the pipes, which should be the box B; and E is where I generally put in the supply-pipe, which need not be more than three-eighths of an inch thick.

You will observe from the sketch I have four flows and four returns, the surface of which is a little more than two rows of four-inch-bore pipes; for the circumference of a four-inch-bore pipe is about $14\frac{1}{2}$ inches, while that of four one-inch bore pipes is better than 16 inches. Sometimes I put only three rows, and sometimes only two, just according to the size of the house. F is a slide for lighting the gas, which can be opened and shut at pleasure. There is a tap for drawing the water off at any time. H is a two-inch sheet-iron tube for carrying-off the burnt gas.

This boiler may stand in the greenhouse and the flue-pipe be taken through the roof, or, what is better, if practicable, put into a chimney-shaft. This boiler contains about three quarts of water.

If you refer to your No. 90, at page 738, you will find an inquiry and a remark made that two three-inch pipes should be used; and as regards heating surface no doubt the remark is quite right; but, as a practical engineer, I must beg to say that neither two nor three-inch pipes ought to be used for gas, if economy is to be considered. Supposing, for example, the circumference of a three-inch pipe is 9 inches, 1 foot in length would contain 84.82 cubic inches of water. Now, if we use three one-inch pipes instead of one three-inch pipe, we obtain the same heating surface, and have only 28.27 cubic inches of water to heat: consequently a great saving in gas is effected. I use to my gas boilers one-inch-bore wrought-iron pipes. Sometimes I put as many as four flows and four returns, just according to the size of the house.

I can guarantee my small gas boiler to keep the frost out of a greenhouse 20 feet long by 15 feet wide for something like 3s. 6d. to 4s. per week. I have several fixed in Liverpool, and some in Scotland; some have been at work ever since this time last year, and have been also fixed in the house without any injurious effects whatever. In short, that is impossible, as all the burnt gas is carried off.—T. C. CLARKE, *Eagle Foundry, Liverpool*.

AMERICAN ICE-HOUSES.

ICE can be kept in large quantities during the whole summer season in houses built entirely aboveground; but where it is desired to have a preserving-chamber, and to insure a sufficiently low degree of temperature to attain good results, it is indispensably necessary that the earth should be banked-up to the height of several feet against the outside of the building. In constructing my ice-house, I took the advantage of a convenient and descending spot, sunk a pit 15 feet by 18, and from 4 to 5 feet deep; walled it up to the height of 9 feet, banked the earth up to the top of the wall all around, except a space for the doorway; upon the wall I put a frame 6 feet high, which gives a height inside from the bottom to the comb of the roof of over 20 feet. I put heavy sills in the bottom, except in a space 4 feet square for the preserving-chamber. Upon the sills I put a floor of two-inch oak plank, and on the top of this a floor of one-inch pine jointed closely. The floor has a descent of 2 inches

towards the preserving-chamber, and it conducts the waste water from the ice to this chamber. I put it in an inside frame, and lined it inside; this left a space of 6 inches between the lining and the wall to fill with sawdust, and the partition between the ice and preserving-chamber is also double, and filled-in with sawdust well packed.

To complete the preserving-chamber, I first put in clean sand to the depth of 4 inches, then paved it with medium-burned bricks, they being preferable to hard, on account of their capacity to absorb and retain a large amount of water. Pains were taken to have the floor exactly level in one direction, and also very tight, so that all the waste water from the ice shall be conducted to and distributed regularly upon the bricks. This keeps them so constantly cold as to preserve milk during the hottest season for from thirty-three to thirty-six hours perfectly sweet, and keeps butter very hard. One valuable feature belong-

ing to this mode of preserving milk and butter is, that during the warmest weather of summer season, when cold, sweet milk, and butter of a degree of solidity equal to that of the winter season, are appreciated as two of our greatest luxuries, we can have them so, from the simple fact that at that particular time the supply of cold ice water is greatest.

Butter made and kept in this way does not become so soon soft after being brought to the table, as that which has been kept in a spring of water, nor do thunderstorms appear to hasten the development of lactic acid. We have noticed no perceptible difference in the length of time which the milk has remained sweet, in regard to clear or stormy weather. I have observed at different times, by placing the thermometer within a foot of the bricks in the preserving-chamber, that the temperature was about 54°, while it was 95° in the shade outside. The sand underneath the bricks subserves an important purpose, by retaining the water, and supplying it to the bricks by capillary attraction at such time as there is not a great supply coming from the ice.

The space above the preserving-chamber should be open and unobstructed to the roof, and over the ice there should be good ventilation to the roof, to carry off all the vapour which may arise from the milk.

An ice-house constructed in this manner is one of the best investments for a farmer, for besides securing the luxury of preserving milk and butter cool, vegetables of different kinds may be preserved fresh until a succeeding crop grows. I kept one year's Beets good till the following summer; also Cabbages. These latter I laid upon the ice, which imparted to them a crispy sweetness, perfectly delightful in the very warm weather of June. Vegetables may also be preserved in this manner by farmers, so as to bring them fresh to the market in early summer. —(*Canadian Agriculturist.*)

PRESERVING ICE IN AN ICE-HOUSE.

THE ventilation adopted by "AN ELEVEN-YEARS SUBSCRIBER" I think was not so much at fault as the quantity of ice put together. Twenty loads of ice, when pounded, would not make a larger bulk than ten loads or tons of Potatoes. Probably no ice-house in the three kingdoms could keep twenty loads of ice longer than he states. Fifty loads of ice are about the smallest bulk which most gardeners would like to trust to for a season's supply; but just double that quantity, or very near it, is the more usual amount, and I have put 160 loads in one heap in the open air, and found it not too much for a daily run on it from the beginning of July till ice came again. It strikes me a "return" of the quantities of ice stored by a dozen or two of our leading gardeners, who have to keep up a large supply, would be an excellent guide for a right understanding of this question. About fifty loads are the smallest quantity I ever saw put together. I often put from seventy to eighty loads together, sometimes 100, and on several occasions 150 loads. —D. BEATON.

BOILERS FOR GARDEN STRUCTURES.

HAVING observed in one of your Numbers of December last a few remarks from Mr. Legg, of Tranmore, relative to the merits of Clarke's new patent boiler as compared with those of the old saddle-back boilers, allow me to offer some observations in corroboration of Mr. Legg's statements, as I have had considerable experience in the management of saddle and similar boilers for some years, and latterly of Clarke's new patent. Like Mr. Legg, I too opine that those who are in favour of saddle or similar boilers are not aware of the merits of Clarke's, one of which has been under my care for more than twelve months past, and I have found it exceed my most sanguine expectations.

About fifteen months ago my employer wished to have erected a new vinery, and, at my suggestion, on the rafter principle, 50 feet long by 15 feet 6 inches wide, to be divided into two houses—in connection with an old but still good metallic vinery and succession Pine-house combined, 43 feet by 17, which was heated by one of Thomson's retort boilers. This was considered incapable of heating effectually the three houses collectively: consequently it had to be removed for one of greater power. As I was permitted to select any kind of boiler that would meet the requirements, owing to the apparently superior construction of Clarke's

new patent, I at once applied to Mr. Clarke, of Liverpool, to furnish us with one of his smallest-sized boilers, with piping, taps, &c. I now find it takes less fuel to heat the whole range than what the retort boiler took to heat the whole vinery, and with fully one-third less attention, which latter I attribute chiefly to the efficiency of a very ingeniously-contrived deflecting flue-plate or hollow top, in thoroughly concentrating the heat. It is truly, as Mr. Legg observes, a capital amateur's boiler, and, I may add, also for where extensive ranges of glass are required to be heated on the one-boiler system, as, in addition to the above merits, a duplicate would not be required to assist it; and it possesses strength of material, great power, and rapid heating capabilities.

In conclusion, allow me to add that I hope shortly to prove its further capabilities in heating an early Peach-house, 36 by 15 feet, by the same boiler.—W. GARDINER, *Eatington Park, Stratford-on-Avon.*

COVERING HOT-WATER PIPES.

You will oblige me much by advice how best to obtain bottom heat in a pit lately completed, having one four-inch flow-pipe above in front, and four four-inch return-pipes side by side below, like a table or counter, 3 feet from the glass.

I put a foot of cocoa-nut refuse over the return-pipes, yet though they are so hot that I can hardly bear my hand on them below, the refuse above them is as cold nearly as the garden border.

Would tan bark above the return-pipes, a foot thick, allow the heat to reach pots plunged in it properly?—J. M.

[You could scarcely have a worse conductor of heat than the refuse tan would be. For cleanliness we prefer small stones for a foot, and sand to plunge in; but coal ashes do admirably. In such cases we generally use stones, and then surface with anything most convenient. We have just half the number of pipes for giving bottom heat to a Melon-pit, and the earth generally becomes warm above the stones in a couple of days, and retains the heat then.]

DUNG FERMENTING ON A VINE-BORDER.

I HAVE covered a Vine-border with fresh stable-litter laid on at various times during the last two months, and find that since the last layer was put on the whole of the covering has fermented very much, and is now hot. At the same time a stake, pushed through it into the earth of the border, is not much warmer than the air at the lower portion of the stake. Can you tell me if the heat being so considerable at the top is likely to injure the roots of the Vines? The border is well drained, and has an open trench in front. I am about to commence heating the inside of the house.—A READER.

[You must judge for yourself, according to the depth of the roots. It is as well that the soil should not be warmer than from 70° to 80° where the roots are. If the roots, however, are a foot from the surface they will take no harm, though the heat on the surface of the soil should be as much as 85° or 90°. If the course is persevered in you must be more careful of the extra heat every year, as the roots will get nearer the surface. If you find the heat is too much where the roots are, reduce the covering. The bottom of a long trial-stick is no guide; regulate your proceedings by the heat indicated by a thermometer where you expect the most of the roots to be. Many Vines have had their roots burned when a strong heat was applied, and the roots were near the surface.]

GISHURST COMPOUND.

THE paragraph at page 14 of your last Number of the Journal, speaking of Gishurst compound, makes me venture to send you the enclosed extract from a Melbourne newspaper received only the day before yesterday. The writer, an influential amateur horticulturist, was unknown to me until he wrote me the results of dressing with Gishurst on his and his neighbours' Orange and Apple trees. "The zeal and enthusiasm of the inventor" has never gone so far as Mr. Carson, who, speaking as he found, and unconnected with Gishurst except as a purchaser and user, has for nearly three years constantly held up the virtues of Gishurst. I believe it is a medical rule that medicine is best studied where

the disease is most virulent. Mr. Carson's account of the Australian blights, unchecked as they are by winter, makes our English ones appear insignificant.

From having been some twenty years among chemical experiments, I have had some practice in watching results; and yet must confess that the Gishurst action sometimes fairly puzzles me. That it does more than soap, and sulphur, and tobacco, and any combination of all or any of them, I have heard and seen too much to doubt; but to obtain the full action on trees at rest strong solutions must be used, and then some care must be used not to injure the buds.

For several years past I have made it a point of honour to dress all my own trees with either a stronger or more thorough Gishurst washing than I recommended, and I never gave them any after-waterwashing, so that any injurious action might be at once perceived.

Early last month I very thoroughly drenched my trees with a solution, eight ounces to the gallon, laid on by means of a large painter's brush. One portion of the trees had the solution, fresh from the box, used directly it was dissolved; another portion had it dissolved forty-eight hours before, as recommended. Yesterday, on carefully going over the trees, I found that Apples, Nectarines, Cherries, Peaches, Apricots, are all crowded with their fast-swelling perfectly-healthy buds and the Plums quite untouched; but some of the Pear-buds are browned and will fall. Now the trees seemed all at rest when the solution was applied. Some of the Pear trees have not a bud injured, others a few buds, others a large proportion. Last year—and I doubt not a similar result will obtain this—increased vigour in the buds left made the trees bear as much fruit as was good for them to carry; but the result of this second year's experience would lead me in future to recommend not more than six-ounce applications (unless followed by a waterwashing) to Pear trees, even when at rest.—GEORGE WILSON.

Extract from a paper read in the Athenæum, Kew, by Mr. Carson.

"But, fortunately for those now about to plant, about three years since Mr. G. Wilson, of Belmont, having a desire to free his sister's Roses from the aphid, discovered a most effectual remedy that is now sent out under the name of Gishurst compound, at a cheap rate, by the company that he is connected with, and can be so prepared and applied as to meet every case of attack from any of the insect tribe, and with not the slightest injury to the trees. The benefit this invention has been to the gardening world may be conceived when I state that the year it came out I had made up my mind to root-up all the Orange trees and put them in the fire, for all our spare time did not suffice to keep them clean.

"At this time I was burning my blighted Apple trees, and lately I have been told by several gardeners that they had condemned their Apples when they learned from me of this cure. But for this the axe, they said, would have settled blight and trees together."—(*The Yeoman and Australian Acclimatiser* 27th Sept., 1862.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHERE a systematic rotation of crops is carried out it is an excellent plan to trench all the kitchen garden successively in the course of every three years, the trenching to be performed each year to be on the ground intended for tap-rooted plants—such as Carrots, Parsnips, &c.; also in laying-down new plantations of Strawberries, Raspberries, bush fruit, &c., if the sub-soil is stiff and sour it should be left at the bottom, and a good coat of cinder ashes worked in amongst it, which would serve to facilitate the passage of water and the admission of the atmosphere. Beans, Broad, sow some Longpods to succeed the crop sown in November. Carrots, sow Early Horn on a sloping bank thoroughly prepared for the purpose. Peas, sow a good breadth of any of the early sorts to succeed the November sowing. Potatoes, Ashleaved Kidney and Early Manly may be planted on a warm border; sets of these may likewise be planted in small pots for the purpose of being forwarded for planting-out in the open ground.

FLOWER GARDEN.

As the weather is mild the planting of trees and shrubs may be proceeded with, as may also the pruning where pruning is

necessary. This is a good time to lay new turf, or repair turf edgings. See that all half-hardy plants are secured against severe weather. Regulate herbaceous plants, reduce Phloxes, &c., where they require it, and replant them after well digging the ground; take care not to plant too thickly, and leave room for more tender plants in summer.

FRUIT GARDEN.

If Vines on walls have not been already pruned the operation should be no longer delayed. Protect Figs, if not already done. The method generally adopted is to unnaill the trees, tie them in bundles together, wind some straw ropes around, and cover them with mats. Regulate the heads of Filbert trees, and remove suckers.

STOVE.

This is a good time to prune and regulate the heads of the specimen plants. Many—such as *Justicias*, *Poinsettias*, *Aphelandras*, &c.—had better be cut down altogether, and kept dry for a few weeks; if the stock of *Euphorbia jacquiniæflora* is large cut down some of them also, which will enable them to make an early growth, and, consequently, come into flower earlier next winter. Look at the *Gloxinias* and *Gesneras* on the dry shelves, and set a few roots of each into growth to produce a succession of flowers.

GREENHOUSE AND CONSERVATORY.

The conservatory should present a gay appearance now if the forcing-pit has been well supplied. Examine daily every flowering plant, remove every decaying flower as it appears, and see that the foliage of *Camellias*, *Rhododendrons*, *Oranges*, and similar plants is perfectly clean. The contrast produced by the fine, clean, large leaves with the numerous blossoms at this season especially gives increased interest to the houses, and renders them doubly capable of yielding enjoyment. Keep the *Pelargoniums* in the greenhouse in a quiescent state, give as little water as possible—in fact, none, unless the plants show a disposition to flag in the leaf. Abundance of air is requisite, avoiding, however, cold currents, which are very liable to spot the leaf when in a tender state through close confinement. Keep *Cinerarias*, *Heliotropes*, *Calceolarias*, and all softwooded plants in the lightest part of the house and as near the glass as possible; *Correas*, *Epacrises*, *Heaths* to be placed on a bench by themselves in the most airy part. This is a good time for collecting the droppings of deer, sheep, and stall-fed oxen; these and such like manures as can be procured should always be had in store.

FORCING-PIT.

The principal point to attend to here is to keep the temperature, with a moderate supply of moisture at 60° at night. Let the maximum be 65°; and to keep up the supply of such plants as can be forced successfully, and be made available in the conservatory either for decoration or perfume, bring in Persian and common Lilacs, Azaleas, both the hardy and Chinese sorts, Lily of the Valley, Hyacinths and other bulbs, *Acacia armata*, *Epacris*, hardy and Nepal *Rhododendrons*, *Daphnes*, *Deutzias* and the early sorts of *Pelargoniums*, *Roses*, &c.

PITS AND FRAMES.

Examine your stock, and such plants as you are short of should now be placed in a gentle heat for the purpose of exciting their growth for cuttings—*Verbenas*, *Petunias*, *Salvias*, *Heliotropes*, *Ageratums*, *Pelargoniums* of sorts, and all other such plants for filling beds and borders in summer. Prepare soil for potting-off store pots. Auriculas require great attention just now. Care must be taken to remove decayed leaves, the surface-soil to be kept stirred, and the plants allowed all the air possible, bearing in mind that drip or too much moisture at this season is their destruction. Polyanthus to have all trusses of flowers removed, if good blooms are to be expected at the proper season. Tulips are peeping up, and will require to be covered on frosty nights with mats or hoops placed across the bed. Carnations to have all the air possible; if they are well established and of a fine glaucous hue they require but little attention in comparison with those that have been potted late; bricks to be put at each corner of the frame, raising the woodwork at least 4 inches from the ground to secure good ventilation. Ranunculus-beds to have a dressing of old cowdung and old leaves slightly forked-in preparatory to planting in February. Examine Pink-beds, and where the pipings have been raised by worms they must be carefully fastened. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

ATTENDED to vegetables as mentioned last week. Took up more Sea-kale and Rhubarb. Gave all the air possible to Radishes, Lettuces, and Asparagus under glass, the two-light frame of the latter still furnishing excellent cutting. See the mode of packing in a previous Number. "HECTOR" says he has very little from a two-light box; but, no wonder—he had placed his old lump of roots as thinly as he would put Cauliflower plants in a quarter. According to his own account a quarter of a light would have held all his roots and not been much crowded. There is nothing gained by thinness in such a case, as the roots are of no more use after being forced, and, therefore, the less room they occupy, provided the buds have free opportunity to lengthen, the better. It is this fact of the uselessness of the old roots after forcing that makes Asparagus so costly in winter. The great advantage is, that the soil from whence the Asparagus is taken is fit to grow anything else afterwards. To obtain Asparagus in November and on to the 1st of January, all things considered, I question if there is any mode more economical than taking up part of an old bed and packing the roots closely over a bed of dung and leaves. But circumstances must alter treatment. For instance: here is a "LOVER OF ASPARAGUS," who writes to say, "I have little ground for kitchen-garden purposes. I am anxious to have Asparagus after Christmas—say about the 10th of January, but if I succeed I must have the plants to bear continuously, and though I have sufficient litter to give enough of heat, I must have that litter concealed. I could use at that time five sashes 5 feet long and 4 feet wide, and I have wooden covers to match the sashes. What had I better do?" The best plan for you would be to have Asparagus-pits, either raised above the ground or mostly sunk beneath it, if there is no danger of water lodging. Suppose the last to be the case, I would fix on a suitable place and mark out two pits 21 feet in length and 8 feet in breadth, with a six-foot space between them. These eight-foot widths I would excavate to the depth of $2\frac{1}{2}$ feet. The outsides I would slope a little from top to bottom, and keep all tight with brick on bed, leaving a little more than 18 inches for lining. The centre space would be a brick pit, the wall pigeon-holed until you came near the level of the ground. The front wall might be a couple of courses above that level, and the back wall four courses or five, which would give a slope when the sashes were put on. Now, inside of that pit I would fill-in 15 inches of any rough boulders or clinkers, to secure effective drainage, and also admit the heat freely from the linings. On the top of this I would have 15 inches of good loamy soil two parts, and the other parts of equal proportions of drift sand and sweet leaf mould. On that I would plant two-year or three-year-old plants rather thickly, and as soon in the spring, and not before, as the plants had grown a couple of inches in length. These should be watered and shaded a little at first, and top-dressed with rich manure surfacings and manure waterings several times during the summer. A little hot dung in the linings until midsummer will cause them to come strong the first year and ripen early, and will thus produce a gathering the next season, though it would be as well to wait until the following year. I am supposing that both pits are treated exactly alike. I am also supposing that fillets are placed on each side of the lining, or that $1\frac{1}{2}$ inch of brick has been left out all the way along to receive wooden covers, about 6 feet long, which will thus conceal all the dung.

Well, the first season it is designed to force the Asparagus the heads should be cut down as soon as the foliage becomes yellow, the bed be cleaned, forked-over a little, some fresh mulching with a little salt added, and then covered-up with either the sashes or wooden covers to keep drenching rains from the bed. About the middle of November fill the linings half up with hot dung and leaves, and cover with the boards, and in a few days water the beds with manure water at about 100° . In a fortnight fill up the linings. As soon as the Asparagus is a couple of inches in length endeavour to use the glass sashes to secure greenness. By this time the second bed may be slowly excited, and the wooden covers would do for that until the glass could be spared from the first bed. By using these beds as the first alternately, and giving rich manuring during the summer, these beds would continue bearing a great number of years, and, if anything, be yearly becoming better. Much would depend on the free growth in summer and the early ripening of the shoots in autumn. I have often resorted to a medium mode between

such established pits and taking up the plants, by having some beds well raised in the open garden, with alleys 18 inches deep between them, filling these alleys with fermenting dung and then covering that with straw, and either laying loose sashes across the beds or setting hand-glasses on them. I have also obtained a gathering a fortnight before the usual time, by setting four-inch flower-pots thickly over the beds as soon as the shoots began to peep above the surface, with a tile over the hole of the pot. In sunny weather the heat inside the pit caused rapid growth. In a frosty night some litter sprinkled all over kept the shoots all right.

For some years I found blanched Swedish Turnip-tops rather liked in the winter months, but my man says they seem not to be much cooked now. In severe winters, however, they would be very useful in many circumstances. We can have as many as we like by merely sticking the tubers in a little moist earth or litter in the Mushroom-house. Any place averaging from 50° to 60° of temperature would produce them in great quantity. No doubt they would be good green, grown in light; but I think they are richer when yellow from having been grown in the dark. The head should not be above 6 or 7 inches in length before it is cut; and if not longer, the Turnip is not much injured for cattle.

Potatoes, started in small 60-pots, have been transferred, three plants to a 12 or 15-inch pot, and two to a nine-inch pot. The pots were drained, half filled with light loamy soil containing a good portion of leaf mould, and the plants, each with one stem, placed close to the sides and the pots filled-up to within 1 inch of the top, pressing the rather dry soil firmly about the plants. If left loose these will grow as well if not more freely, but they will not tuber so well.

FRUIT GARDEN.

Proceeded with nailing and pruning as the weather would permit. Looked after insects which have not quite left the Peach trees in pots. Removed all traces of decay or shrivel from branches of late Grapes, keeping the house empty and dry, and a fire every damp day. Rather more than half of the house being cleared, contemplate pruning and clearing that portion, keeping a cloth between it and where the fruit is, and then cram it as well as every other place with plants. Placed some Strawberries in vinery from a frame where they stood for several weeks, on a hotbed, not plunged in it. Put a few more leaves in the frame to bring the bed nearer the glass, and filled that again with Strawberry plants, standing on the surface so as to be coming on for the Peach-house, which now, with the exception of 1 foot of path, is crammed above and below with bedding plants, but these will be removed as soon as the buds swell. All the air possible is given, unless on frosty nights, as we do not want the crop so early this season. No black fly or beetle have appeared since the smoking, washing, and painting of the shoots. When painting the shoots is resorted to, be it Gishurst, some combination of sulphur and clay, or even clay and soot alone, I think it important that this should be done as long as possible before the buds break. Washing just as they are swelling fast, can be of little use for keeping insects and their eggs shut up from the air.

Put in a fortnight ago a number of Vine-cuttings in a mild hotbed, and moved them to a warmer bed to encourage quicker growth. There are many ways of treating these cuttings or buds. Perhaps the oldest is as good as any. Take a shoot, or shoots, of the Vine to be thus propagated; cut it into as many pieces as there are good buds, leaving about a space of 1 inch on each side of the bud, thus making the cuttings 2 inches long. The two ends may as well be cut clean across. This is all that is really necessary in making the cutting of well-ripened wood; but, in addition to this, I generally slip off a thin shaving on the side of the cutting opposite to the bud, so that more liber and albumen are exposed. Then, taking a number of six-inch pots well drained, and filled to within 1 inch of the top with sandy loam neither wet nor dry and pressed pretty firm, the cuttings are placed somewhat thickly with the shaved part next the soil, pressed rather firmly, and, with the buds thus uppermost, I cover them with half an inch of sandy soil. If the pot is plunged in a hotbed and covered over with a saucer, there will be no necessity for watering until the buds are appearing. When great nicety is necessary, as when it is required to fruit the Vines from these cuttings the following year, the cuttings should be separately put into small pots, and then the roots receive little or no check in potting. Removed the Vines in pots that

were placed in a frame with a bed of leaves and horse-droppings, into a pit where a little fire heat could be used, because the frame being in a rather shady place and the weather so dull, no moderate amount of air would enable one to dry the Vines, but the moisture and damp hang to them—a matter of no moment for the first few weeks, but which might have injured the buds as they were swelling.

ORNAMENTAL DEPARTMENT.

Here, too, pruning, planting, digging, and clearing have been generally practised, along with leaves-gathering. Conservatory plants were looked over. In stove, small plants of Ferns and other things repotted into aired heated soil. Pelargoniums were smoked with tobacco and capsicums—Scarlet Geraniums especially; Variegated were potted separately; and Verbenas, being very thick in 60 and 48-pots, were repotted into 32-sized pots, or several plants put into a 16-pot. Before doing this, as there were a few whitish marks, respecting which it was doubtful whether they were white smears or might be mildew, and as, though I did not see any, I was rather suspicious that there might still be some vestiges of thrips left, a bucket was filled with sulphur laurel water, and, turning each pot with the fingers across the soil, pulled the heads of the plants several times through the solution, and then, to prevent the latter finding its way into the soil, laid the pots down on clean litter on their broadsides. After remaining there half-a-day, each potful was syringed round and round with clear water at about 130°, and the pot watered so as to make sure of every fibre being moistened, and thus to be ready for shifting the following day. The soil used was light and rich; and though the small pots had been nearly half-filled with crocks, all were left in, and the roots not disturbed. After potting, the pots were plunged in a leaf-bed with a kind gentle bottom heat; but in all such mild weather the tops will have plenty of air. From what I have seen take place with Verbenas I have a reason for every one of these minutiae. One friend says, "Why not pot-off the Verbenas singly?" Well, this I never like to do until the middle of the month and in favourable circumstances; but as to finding room for a tithe of such potted-off plants I might as well attempt to fly. The little bottom heat at first after shifting will cause vigorous root-action. The plants can be shaken-out afterwards for earth-pits if we think proper; but our chief object is to have plenty of stubby short-jointed cuttings a month or six weeks hence. I have several times stated how to make sulphur lime-water: a gallon bottle of it will last ever so long.—R. F.

TRADE CATALOGUES RECEIVED.

W. Cutbush & Son, Highgate, London.—*Catalogue of Select Vegetable, Flower, and Farm Seeds for 1863.*

Plymouth Seed Company, Plymouth.—*General Price Current of Kitchen-Garden, Flower, and Farm Seeds.* 1863.

J. Illman, Wellington Place, Strood, Kent.—*Catalogue of Stove, Greenhouse, Hardy Exotic and British Ferns.* 1862.

TO CORRESPONDENTS.

LOBELIA SEDLING (J.O.).—The two plants are now in most beautiful health in Mr. Beaton's omnibus-pit. They seem much easier to keep than speciosa, and would make a gardenful of plants by next May were they propagated to order. One of the plants flowered in September, and was not then nearly so good as the same style of seedlings was at the Crystal Palace; but it was too late in the season to judge properly. They will not be propagated, but will have a fair start in a clergyman's garden, and Mr. Beaton will report on them in August.

BUDDING FORCED ROSES (P. Brentwood).—Your plan is founded on scientific principle, and your plan and theory are both correct, and must succeed; but, after all that, the practice of the whole trade is against you. We shall enlarge on this question next week.

GOURDS ON POLES (Adolphus).—One of our regular correspondents has grown them on poles for the last two years, forming a series of arches across a central walk in the kitchen garden; but he thinks, from the short time the plant and its fruit remain ornamental, they hardly deserve the trouble they give. A pear-shaped and a fig-striped one were about the most ornamental in a dozen or twenty varieties; but they sport very much. The best eatable varieties are the old Vegetable Marrow and the Custard. We have heard of others being wholesome, but not so agreeable as these. We cannot undertake to recommend nurserymen; and such a sporting plant as the Balsam is always prone to furnish single-flowering plants from seed of the best double.

FARFUGIUM-LIKE CYCLAMEN (T.).—We are requested by Mr. Beaton to say that a customer comes forward, who will give a fair price for the Cyclamen with the leaves blotched like the leaves of Farfugium grande, providing Mr. Beaton can assure him that the leaves are really so marked. If "T.'s" friend will, therefore, send a leaf to Mr. Beaton, it will be sent back by return of post if "T.'s" friend wishes it.

HIPPEASTRUM EQUESTRE CULTURE (H. M. K.).—There were two kinds of it from the West Indies, one with larger flowers than those of the other. It is the most difficult of them all to manage, owing to its "singular constitution." Naturally, it is not prone to expend itself in making offset bulbs like your plant. You cultivate it like *alicum* and that race, otherwise your tale would be different. *Hippeastrum equestre* should lie dormant, in a dry place in the stove, from the end of October to the beginning of April, and then be watered until the plant flowers, or until the leaves are at their full length—say by midsummer. From that moment, from the flowering, or from the leaves attaining their full length, it is a hardy greenhouse plant, and in July and August would do better out of doors than in any house; but by the end of August it ought to be on a high back-shelf in a greenhouse, be watered till the end of October, and then turned into a stove and water withheld, soon after which the leaves die down.

SPAN-ROOFED GREENHOUSE (J. Buckley).—It is purely a matter of taste and economy as to whether you have a house made with rafters and moveable sashes, or a fixed roof. Where much heat is not required, you may give air by the moving of the front upright sashes; where much fire heat is wanted, as in early vineries, it is a great advantage to admit air close to the warming medium. With sashes, you could have the upper ones to slide. With a fixed roof, with three-inch rafter-sash-bars, you had better have a double ridge, with a foot ventilator between and a cowl outside, as Mr. Cox airs his houses at Kilmington; or, as you seem to contemplate a stage in the middle of the house, that ventilator could be drawn along from the ends, as is done by Mr. O'Brien, at Mr. Bewley's, near Dublin, or by Mr. Niven, for front air, at Drumcondra, which we presume you have noticed. In a fixed roof, the supports will do well. Of course there is a bar on each side the whole length of the roof, against which these posts abut. In a sliding roof with rafters, no posts would be necessary. For a greenhouse alone, the height of 12 to 14 feet would be ample in your exposed place. The higher you go the more room for the Vines, but the more exposed it will be. We would have the two ends pointing north and south.

CENTAUREA CANDIDISSIMA (J. C.).—We have just seen ten plants of *Centaurea candidissima* in No. 16-pots in a nursery, and the way followed there would suit you and all other nurserymen. A dozen were bought last year for stock; they were planted-out, and were too late for autumn propagation; they were lifted, and put into the big pots at once, and in the beginning of December they were put into a gentle forcing-house—say into 50° of heat at night, and on the second day of the new year we saw them just on the move; and we advised an old practical hand to have all the centres of the heads of the plants to be stopped, by twisting a piece of wire down the centre of each division of the heads, and that stopping will increase the suckers and side shoots tenfold for cuttings. Our friend had done the Pine Apple suckers long since on that plan, stopped them, and put more strength into the fruit—a better plan, he said, than teasing a good fruiter by tearing-off so many suckers.

CATERPILLAR (T. F. R. C.).—It is a caterpillar of the Noctuidæ, and most probably of *Noctua uncinulosa*, the Angle Shades Moth. This caterpillar had been very destructive of our correspondent's Begonias and Cinerarias.

EVERGREEN-BED (B. B.).—As you have Rhododendrons already, and wish a graduated rise in the evergreen-bed from the edging of Roses, the best plan would be to plant the first row of *Andromeda floribunda*, about 10 inches or a foot high, and a foot from the Roses, and make the bed of different sizes of *Berberis aquifolium*. After a bed of one high colour of Rhododendrons, a bed of this *Berberis* is the most telling evergreen-bed that has yet been made. Mind, the Roses must be Chinias and kept very dwarf, otherwise the effect of the bed is soon ruined.

BEETROOT EDGING (A Constant Reader).—Our correspondent asks "Will Beetroot make a good edging to *Calceolaria floribunda*, or can you give me a better?" Beetroot would make a good edging to any of the bedding plants; but the question is, who would like it save a farmer, and he would find a much better use for it.

BEDDED GERANIUMS (Idem).—Christine, edged with Mangles', would be more telling than Bijou or Mountain of Light, or any of the other variegated Geraniums, or all of them put into one bed could be with an edging of Mangles', and for this reason—that there is no contrast and no combining of tints, when a bed of variegated plants is edged with a variegated plant of the same kind as that in the bed.

LIST OF BEDDING GERANIUMS (Idem).—There are two kinds of Alma Geraniums as bedders—Mr. Dennis's large purple perpetual of the greenhouse class, and the variegated Alma. Both these are the very best in their respective sections, and both of them are less miffy, to a certainty, than any other kinds of equal merit in their strains. The best dwarf Nosegay Geranium is Baron Ricassoli, and "D. Deal" puts it first in the lists of last year. But to decide which is "the best" of anything in "gardening" is a futile attempt, for tastes differ. However, we shall enumerate the good, the better, and the best, according to our liking after a while.

COCOA-NUT FIBRE DUST (W. H. T.).—A hundred times we have said that this refuse is *dust*, more like brown snuff or mahogany sawdust than anything else, and you send us a bunch of hair-like fibres and ask us if that is it! Such fibres will do to cover pot-drainage, but for nothing else. (T. B. M.).—This is the right material, though not so fine as it is usually.

PAINTING WITH GISHURST COMPOUND (W. P.).—The painting of the walls, &c., of a Grape-house and orchard-house with Gishurst compound could do no harm if done now, so that the strong scent would be gone before the buds swelled; but, unless there is some particular reason, we do not see much to improve in the plan. If the walls were full of holes and insects, then it would be desirable.

MULCHING AND WATERING VINES (Idem).—When to do so is too indeterminate, and depends, especially watering, on the time you wish them to grow, and if dry or moist at the roots. Mulching can do no harm at any time. Night soil, either liquid or otherwise, should be used in small doses. Last year we knew some fine young Vines ruined, because their owner imagined nothing could be too rich or too gross for them.

CAMELLIA FLOWERS DEFORMED (An Inquisitive Under-Gardener).—When plants are very healthy, the appearance you complain of—the flowers defective, or twisted on one side—is often the result of the centre of the ball being left dry, or too much water remaining from defective drainage; in either case the root-action being deficient. If neither of these is the source of the disappointment, it would be advisable to tie a woollen thread round the buds when swelling freely, to keep them from splitting.

SEEDLING CINERARIAS (*W. H. M.*).—They are good border varieties, but there are many better.

NAMES OF FRUITS (*Wm. Godsal*).—Fondante de Noël. (*J. B. E.*).—1, Cockle Pippin; 2, Dumelow's Seedling; 3, Keswick Codlin; 4, unknown; 5, Lewis' Incomparable; 6, Grange.

NAMES OF PLANTS (*C. G., Stafford*).—*Pilea muscosa*. It belongs to the natural order Urticaceae, and the Linnaean class and order Monocia Tetrandria. (*B. J. S.*).—The plant is known as *Celosia pyramidalis aurea*, really a feathered variety of yellow Cockscomb—that is to say, a sport which has taken the opposite direction from that of the great flattened "combs" more usually grown. (*Katey Did*).—The specimen of the plant which grows so abundantly on Clee Hill, Shropshire, is *Lycopodium clavatum*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE KENDAL POULTRY SHOW.

THE eighth annual Show of this Society has just concluded, quite eclipsing all the preceding ones; and it may now be deemed fairly established as belonging to the best of our local meetings. This gratifying result has, however, not been attained without a hard struggle on the part of its projectors. In the first place the Kendal Show has from time to time been subjected to many difficulties, simply from the trouble of obtaining a room at once sufficiently large, and at the same time properly lighted, wherein the Exhibition could be held. Various were the successes on this score; and at one time so much difficulty arose in this respect as to cause the meetings to be discontinued altogether for two consecutive years. At length, however, the affair has assumed a far more exhilarating aspect; in short, this year the necessity of the case has worked its own cure. To the astonishment of the Secretaries, they found the accumulated entries made at the time specified for closing them were about twice as many as those of former years; and the question that stood supreme to all others was, first to determine in what way so extraordinarily increased an assemblage could by any possibility be accommodated. The happy thought occurred to them, that if they could obtain the use of the new wool warehouse, now scarcely completed, belonging to Messrs. Whitwell & Busher, every obstacle would be remedied. Its loan was at once kindly conceded, and the Show was consequently held there. This warehouse of two storeys is one of the most capacious structures in the northern counties, well and thoroughly lighted from the roof, and possessing fireplaces, and every other needful accommodation for such a meeting. It is most substantially erected, the timbers being of prodigious strength; and the computation of the builder is, that it would sustain in perfect safety on the upper floor a human being to every square foot. In a comparatively very small portion of this compartment the Show took place; and, were it requisite, certainly fifteen hundred pens could be exhibited in single tiers, and every one in a good light. The arrangements were decidedly good, and the only improvement that suggested itself to our minds was, another season (as space allows it), to show every pen side by side, and especially to place the Pigeon pens somewhat nearer the level of the eye by dropping them at the least 2 feet. But to the birds the selves.

Spanish were the first classes on entering, and so good a show we have rarely inspected. The old birds shown were the most numerous; but the silver cup to the best pen in either adults or chickens fell to the latter. For this premium the competition was remarkably close, so much so that the arbitrator remarked, "that to give it to either was an injustice to its opponent, for both were equally good; and, consequently, each was as equally deserving." A considerable time was wasted in the final determination, for it eventually proved both pens were the property of the same breeder, although the Judge was then unconscious of its being so; and the chickens gained the supremacy, simply as from their youth these birds were of the most pecuniary value, and without any disparagement to the older birds. A closer run was never seen; and if Mr. Teebay has others such in reserve, no doubt 1863 will add much to his present high reputation as a Spanish-breeder. The birds shown by Messrs. Fowler, Heath, Robson, and Dixon, were also very good. The Grey *Dorkings* were one of the gems of the Kendal Show, particularly the whole class of old birds. In *Cochins* the Partridge-coloured were the most perfect; and, although the old birds were a capital class, it strangely occurred the chickens were decidedly the least worthy assemblage in the Exhibition. The White *Cochins* were very good indeed; the birds so much

admired at the recent Birmingham Show still maintained their position. Progressing, we come to the heaviest classes of the Show, the *Game* fowls; the display was universally good. To this portion a silver cup was given for the best pen of Any variety; and Red Piles proved the successful ones, the winner being Mr. Harry Adams, of Beverley. We cannot call to mind a single case heretofore in which Piles stood pre-eminent in a general competition; they were a truly wonderful pen, and we believe have been recently shown by another exhibitor. The *Game* chickens, as a whole, greatly lacked condition, attributable in their case, no doubt, to the late damp season. The Golden *Hamburghs*, Pencilled or Spangled, quite outdistanced their lighter-coloured companions. The Golden-spangled were decidedly one of the best collections seen during the past year. In the class for *Single Game Cocks*, the Brown Red shown by Mr. George Whitwell is worthy of our highest praise. This bird secured the plate premium, the whole class being first-rate; but the cockerel class was comparatively indifferent. Among the adults, pen 237 was "disqualified" on account of the breast being painted to hide a deficiency of colour. It is really time some prompt measures were adopted as a reproof for such unfair practices besides "disqualification;" and we shall be glad to hear that committees take the matter in hand where so mean artifices are detected, as they are evidently either very greatly on the increase, or have been more successfully detected of late than formerly. In the cockerel class a remarkably good old bird was shown; but as this might as probably be the result of accident as design—an excuse not available in the "painted" case—we forbear to state the number of this pen, as the loss of a good position in its own proper class, from disqualification in the young birds, entails a sufficient punishment. The *Game Bantams* were very good indeed, the best birds being found in the pens of three. Singularly enough not a Sebright Bantam was exhibited. Some excellent *Silkie*s were shown in this division.

The *Rouen Duck* class was best of any, though the *Aylesburys* were meritorious. Some capital Grey Call Ducks and tamely-reared wild Ducks were entered in the Variety class.

The *Pigeons* were superior, particularly the Carriers, Barbs, Owls, Trumpeters, Turbits, Jacobins, and Powders. In the "Extra class" were many beautiful varieties, and, consequently, the competition was severe. Some Icelanders and splendid Silver Dun Runts were shown. We also noticed a pair of very large White Runts, shown recently at Newport we believe, and would strongly advise their owner to take special care of them, as, if we are correct in recognising them, they are fearfully gone out of condition, sadly damaged in health, and quite spiritless since shown there, even though so recently. It is a pity to lose such birds from neglect.

We were informed by the Hon. Secretaries, Messrs. Whitwell and Wilson, that for future years the obtaining the same accommodation for the poultry then shown had been made a fixed promise, and we congratulate them on so great a boon. It must give increased hopes for future meetings.

SPANISH.—A Silver Cup, the gift of G. Carr Glyn, Esq., M.P., for the best pen. First and Third, R. Teebay, Fulwood. Second, J. K. Fowler, Aylesbury. Highly Commended, A. Heath, Calne, Wilts. Commended, J. Dixon, Bradford; G. Robinson, Kendal. *Chickens*.—Cup and First, R. Teebay. Second, W. H. Hayward, Birmingham. Third, S. Robson, Burton Salmon, Yorkshire. Commended, J. K. Fowler.

DORKINGS (Coloured or White).—A Silver Cup, the gift of Major-Gen. Hon. G. F. Upton, M.P., C.B., for the best pen. Cup and First, J. Robinson, Garstang. Second, J. Dixon, Bradford. Third, R. Sergenceson, Huyt n. Prescot. Highly Commended, J. Moore, Windermere; Major-Gen. Hon. G. F. Upton, Milnthorpe; Miss M. A. Hill, Woodlands, Heywood; T. Burgess, Whitechurch, Salop. Commended, Mrs. M. Seamons, Aylesbury; H. W. B. Berwick, Helmsley, Yorkshire; G. C. Whitwell, Kendal; T. Whittaker, Lancaster. *Chickens*.—First, W. W. Rutledge, Storth End, near Kendal. Second, R. Sergenceson. Third, J. Robinson. Highly Commended, J. Moore; W. W. Rutledge. Commended, D. Steel, Windermere.

COCHIN-CHINA (Cinnamon and Buff, or Brown and Partridge-feathered).—A Silver Cup, the gift of the Managing Committee, for the best pen. Cup and First, J. Shorthose, Newcastle-on-Tyne. Second, R. White, Sheffield. Third, H. and G. Newton, Leeds. Highly Commended, H. Chavasse, King's Heath, Birmingham. Commended, W. Copple, Eccleston. *Chickens*.—First, R. White. Second, T. Stretch, Ormskirk. Third, C. Bower, Bolton-le-Sands, Lancaster.

COCHIN-CHINA (White).—First, G. C. Whitwell, Kendal. Second, J. Dodd, Middlewich, Chester. Commended, G. C. Whitwell. *Chickens*.—First, G. C. Whitwell. Second, R. H. Nicholas, Newport, Monmouthshire.

GAME (White and Piles).—A Silver Cup, the gift of R. L. Watson, Esq., for the best pen. Cup and First, H. Adams, Beverley. Second, F. C. Ellison, Milnthorpe. Third, J. Fletcher, Stoneclough. Highly Commended, G. C. Whitwell, Kendal; W. Wilkinson, Milnthorpe. *Chickens*.—First, J. Fletcher. Second, F. C. Ellison. Third, W. Wilkinson.

GAME (Black-breasted and other Reds).—First and Third, J. Fletcher,

Stoneclough. Second, W. R. Lane, Birmingham. Highly Commended, H. M. Julian, Beverley; Hon. Mrs. Howard, Milnthorpe; D. Parsons, Cuerden, near Preston; T. Robinson, Ulverstone; H. Adams, Beverley. Commended, W. J. Cope, Barnley; R. Parkinson, Poulton-le-Fylde; W. Rogers, Woodbridge; G. C. Whitwell, Kendal. *Chickens*.—First, R. Parkinson. Second, W. Boyes, Beverley. Third, T. Moss, Poulton-le-Fylde. Highly Commended, Hon. Mrs. Howard; A. Sugden, Kendal. Commended, J. Fletcher; T. Burgess, Whitechurch, Salop; Miss J. Taylor, Kendal.

GAME (Any other variety).—First, J. Fletcher, Stoneclough. Second, H. Adams, Beverley. Third, T. Robinson, Ulverstone. *Chickens*.—First, J. Fletcher. Second, J. Hodgson, Bradford. Third, W. J. Cope, Barnley. *HAMBURGERS* (Golden-pencilled).—A Silver Cup, the gift of the Managing Committee, for the best pen. Cup and First, T. Robinson, Ulverstone. Second, J. Robinson, Garstang. Highly Commended, J. Dixon, Bradford; W. Cannan, Bradford.

HAMBURGERS (Golden-spangled).—First, N. Marton, Manchester. Second, J. Dixon, Bradford. Highly Commended, J. Robinson, Garstang; S. Wales, Kendal. Commended, H. W. B. Berwick, Yorkshire; W. Cannan, Bradford; J. Robinson.

HAMBURGERS (Silver-pencilled).—First, J. Robinson, Garstang. Second, W. Cannan, Bradford. Highly Commended, C. Moore, Poulton-le-Fylde; J. Sunderland, jun., Hipperholme, near Halifax. Commended, J. Dixon, Bradford.

HAMBURGERS (Silver-spangled).—First, W. Cannan, Bradford. Second, R. Teebay, Fulwood. Highly Commended, J. Robinson, Garstang.

HAMBURGERS (Any variety).—First, W. Cannan, Bradford. Second, R. H. Nicholas, Newport. Third, H. W. B. Berwick, Yorkshire. Highly Commended, M. Whittam, Settle.

SINGLE COCKS.

SPANISH.—First, R. Teebay, Fulwood. Second, J. Simm, Kendal. Highly Commended, G. Robinson, Kendal.

DORRING.—First, G. C. Whitwell, Kendal. Second, J. Rowlandson, Hawkhead. Highly Commended, W. F. Erithwaite, Eastbourne, Darlington; R. Sergenson, Prescott. Commended, E. R. Whitwell, Darlington; R. Farrer, Bolton; G. C. Whitwell.

COCHIN-CHINA.—First, F. M. Hindle, Haslingden. Second, Rev. F. Wilson, Haslingden. Highly Commended, Rev. F. Wilson. Commended, F. M. Hindle; A. Worthington, Bolton-le-Sands.

GAME.—A Silver Cup, the gift of the Managing Committee. Cup and First, G. C. Whitwell, Kendal. Second, W. Boyes, Beverley. Third, J. Firth, Halifax. Fourth, J. Fletcher, Stoneclough. Highly Commended, J. Fletcher; M. Whittam, Settle; W. Thompson, Moresdale Hall, Kendal; A. Heath, Calne, Wilts; T. Moss, Poulton-le-Fylde; A. Winkill, Kendal; H. Adams, Beverley; G. Lingard, jun., Birmingham. Commended, J. Sunderland, jun., Hipperholme, Halifax. *Cockerels*.—First, R. Parkinson, Poulton-le-Fylde. Second, J. Boulton, Ulverstone. Third, J. Fletcher. Highly Commended, W. J. Cope, Barnley; J. Hodgson, Whittington.

GAME BANTAM.—First, T. Wilson, Kendal. Second, R. Moon, Liverpool. Third, T. Moss, Poulton-le-Fylde. Highly Commended, C. Bower, Lancaster. Commended, W. Laurencson, Poulton-le-Fylde.

BANTAMS (Game).—First, R. Farrer, Bolton. Second, J. Mashiter, Ulverstone. Third, C. W. Brierley, Rochdale. Highly Commended, J. Cragg, Kendal; E. G. Hornby, Westmorland; J. Wilson, Kendal; R. H. Nicholas, Newport; T. Shaw, Kirkham; W. Laurencson, Poulton-le-Fylde; E. Brown, Sheffield. Commended, T. Wilson, Kendal; R. B. Parkinson, Kendal; E. Holdsworth, Leeds.

BANTAMS (Any other variety).—First, Capt. Wetherall, Toddington, near Kettering. Second, R. H. Nicholas, Newport. Commended, G. A. Gelderd, Aikrigg End, Kendal.

DORRINGS (White).—First and Second, J. Robinson, Garstang. Third, E. R. Whitwell, Darlington.

DUCKS (Aylesbury).—A Silver Cup, the gift of John Whitwell, Esq., Mayor of Kendal, for the best pen. First, Rev. F. Wilson, Haslingden, Lancashire. Second, Mrs. M. Seamons, Aylesbury. Third, J. Robinson, Garstang. Highly Commended, Mrs. M. Seamons.

DUCKS (Rouen).—Cup and First, T. Robinson, Ulverstone. Second, J. Sergenson, Kirby Lonsdale. Third, J. Redhead, Kendal. Highly Commended, Mrs. J. A. Alston, Fleetwood; F. M. Hingle, Haslingden.

DUCKS (Any other variety).—First, D. Parsons, Cuerden, Prescott. Second, F. W. Barle, Prescott. Third, R. Sergenson, Huyton, Prescott. Highly Commended, Miss M. A. Hill, Woodlands, Heywood.

PIGEONS.

CARRIERS.—First, W. Cannan, Bradford. Second, S. Robson, Brotherton, Yorkshire. Highly Commended, J. Lewthwaite, Kendal; W. B. Van Haansbergen, Newcastle-on-Tyne. Commended, T. Bateson, Kendal.

ALMOND TUMBLERS.—First, T. Kew, Westmorland. Second, H. Yardley, Birmingham.

TUMBLERS (Any other breed).—First, H. B. Pring, Newport, Monmouthshire. Second, F. Else, Bayswater, London. Highly Commended, J. Monkhouse, Kendal; W. Cannan.

OWLS.—First, W. Cannan. Second, J. & W. Towerson, Egremont, Cumberland.

POWTERS OR CROPPERS.—First, E. Brown, Sheffield. Second, S. Robson, Brotherton. Highly Commended, T. Kew. Commended, W. Cannan; H. Yardley, Birmingham.

BARBS.—First, A. L. Silvester, Birmingham. Second, M. Irvine, Whitehaven.

FANTAILS.—First, J. W. Edge, Birmingham. Second, F. Brown, Sheffield. Commended, F. Else, Bayswater, London; F. Key, Beverley; J. R. Jessop, Hull.

TURBOTS.—First, R. Thompson, Kendal. Second, J. Barrow, jun., Kendal. Highly Commended, F. Else, Bayswater, London; A. L. Silvester, Birmingham; J. W. Edge, Birmingham.

TRUMPETERS.—First, J. Wilson, Darlington. Second, F. Key, Beverley. Highly Commended, F. Key; W. B. Van Haansbergen; H. Yardley, Birmingham; S. Robson, Brotherton. Commended, T. Kew, Westmorland.

JACOBS.—First, A. L. Silvester, Birmingham. Second, H. Yardley, Birmingham. Highly Commended, R. Thompson. Commended, F. Else, Bayswater, London.

ANY OTHER VARIETY.—First, A. L. Silvester, Birmingham. Second, M. Irvine, Whitehaven (Runts). Highly Commended, J. W. Wooler

(Spangled Swabians); H. B. Pring, Newport (Runts, Spanish imported); R. Thompson, Kendal (Nuns). Commended, A. Heath, Calne, Wiltshire (Isabels).

Mr. Edward Hewitt, of Sparkbrook, near Birmingham, officiated as the Judge.

GAME FOWLS.

"E. A. S." seems to wish that the Game classes should be judged by plumage only, and not for their game qualities. If so, instead of being, as they now are, one of the gems of the exhibition, their character would be totally changed, and a great portion of the interest now taken in them would cease. As "E. A. S." seems to take such interest in them, perhaps he will tell us the whole of the qualities necessary for perfection in a pen of Black Red Game.—AN EXHIBITOR.

DISQUALIFIED BLACK BANTAMS AT DARLINGTON.

I HAVE just returned home, having been absent since the middle of November, and during that time I have not seen a copy of your Journal. I now find that the Black Bantams lately exhibited by me at Birmingham and Darlington have been the subject of some discussion, and I take the earliest opportunity of explaining the matter.

Your correspondent "JUSTITIA" is quite correct in saying I claimed the pen (for £3) at the Crystal Palace Summer Show. They were exhibited by Mr. Hutton, and were "highly commended." He (Mr. Hutton), as he says, took first prize with another pen on which he had £2. I preferred the highly-commended pen at £3 to the first-prize pen at £2, and claimed them. As soon as the birds arrived at home I sent them out to a walk, and did not see them again till a few days before I left home in the middle of November, when my man brought them up, and I discovered that the cock's legs had changed to white. As I was leaving home immediately, my man was anxious to know what was to be done. I told him to write off to Mr. Hutton at once, and inquire if he had any good cocks to dispose of. He wrote back saying that he had, and asked £2 each for them. My man requested him to send two on approval. They arrived (I being from home), and my man assures me that they were perfectly valueless for exhibition, one having legs as bad as the bird I already possessed and being worse in other points, and the other having red earlobes. He (my man) was quite at a loss what to do. He did not know where to apply to for another bird, and he had not time to write to, and receive an answer from, me before sending to the Birmingham Show; so he concluded the only plan was, as he thought, to follow the example of the former owner of the birds and colour the cock's legs. He did so, and they were sent to Birmingham and Darlington in that condition. I suppose his success at the former Exhibition encouraged him to send again to the latter. When they were sent to Birmingham I was in the south of England, and when to Darlington in Scotland, and knew nothing at all of the affair. If I had been at home, they certainly would not have been sent.

In your Journal of December 16th you say "This pen at the recent Birmingham Meeting took first prize among a heavy class." You would have been much nearer the truth if you had said "among a weak class," as by reference to the Birmingham catalogue you will find that only four pens were exhibited. When I claimed the pen at the Crystal Palace the cock's legs were, to all appearance, perfect. Mr. Hutton says "that not the least particle of colouring matter, or stain of any other kind whatever, was laid on, or came in contact with, the legs of the birds referred to, by either myself or any other person, previous to their being dispatched to the Show." I suppose we are in courtesy bound to believe him; but it certainly is the most peculiar case that ever came under my notice, that a bird's legs should change from black to white in three short months. When my man wrote to Mr. Hutton he explained why I wanted another cock; but, in his reply, that gentleman offered no explanation, or even mentioned the bird's legs, confining himself to the mere fact that he had birds to dispose of.—THE EXHIBITOR OF THE DISQUALIFIED PEN OF BLACK BANTAMS AT DARLINGTON.

[We consider the above explanation exculpates Mr. Munn, and his sincerity is sustained by the fact that he has returned to

the Exhibition Committee the prize awarded to the Bantams at Birmingham. The culprit now would appear to be Mr. Hutton, for it is quite certain that the natural colour of the legs of the Bantam would not change.—EDS. J. OF H.]

SCOTTISH ORNITHOLOGICAL ASSOCIATION.

THE fourth annual Exhibition and competition of fancy Pigeons and Canary birds, under the auspices of this Association, took place on the 1st and 2nd inst. in the Trades' Hall, Glassford Street.

In the *Pigeon* department the Show was excellent; and although the entries were not so numerous as at last year's exhibition, still the birds shown were superior, if not unequalled.

In the *Power* and *Carrier* classes the birds were exceedingly good, as were, indeed, all kinds of Pigeons exhibited.

The entries in the *Canary* department were not so large as last year, but this is to be accounted for in a great measure by the number of local exhibitions taking place on the same day; but in consequence of the prizes at this Exhibition being the most valuable, the show of birds was superior. A circumstance almost unprecedented we believe, occurred at this Show—viz., the pair of Canaries which took the first prize last year were again successful on this occasion. There was a fine display of Canaries, and some of the finest Mules we have seen were shown. The following are the awards:—

PIGEON DEPARTMENT.

EXTRA PRIZES.

A Silver Cup, presented by the Association, for the best three pens (Carriers, Powters, and Short-faced Almond Tumblers), G. Ure, Dundee. Very Highly Commended, P. Eden, Manchester.

A Silver Medal, presented by W. Smith, Esq., Halifax, for Powter cocks (Black, Blue, and Yellow), P. Eden, Manchester.

A Silver Medal, presented by P. Eden, Esq., for Powter hens (Black, Blue, and Yellow), J. Huie, Glasgow.

A Silver Medal, presented by J. Miller, Esq., Camlachie, for Blue Powters bred in 1862, G. Ure, Dundee. Very Highly Commended, A. Muir, Coatbridge.

A Silver Medal, presented by J. Huie, Esq., Glasgow, for Yellow Powters bred in 1862, M. Stuart, Glasgow.

A Subscription Silver Medal for Powters, any colour (Blue and Yellow excepted), bred in 1862, P. Eden, Manchester (White). Very Highly Commended, G. Ure, Dundee (White). Highly Commended, J. Millar, Glasgow.

POWTERS (Black cocks).—First, H. Hawkins, Belfast. Second, M. Stuart, Glasgow. Very Highly Commended, M. Stuart. Highly Commended, J. Millar, Glasgow. Commended, J. Huie, Glasgow.

POWTERS (White cocks).—First, P. Eden, Manchester. Second, G. Ure, Dundee.

POWTERS (Blue cocks).—First, M. Sanderson, Edinburgh. Second, H. Hawkins, Belfast. Very Highly Commended, J. Millar, Glasgow. Highly Commended, M. Sanderson.

POWTERS (Red cocks).—First, H. Hawkins, Belfast. Second, G. Ure, Dundee. Very Highly Commended, H. Brown, Sheffield.

POWTERS (Yellow cocks).—First, G. Ure, Dundee. Second, P. Eden, Manchester.

POWTERS (Any other colour).—First, J. Huie (Mealy). Second, W. Taylor, Sheffield. Very Highly Commended, W. Lightbody.

POWTERS (Black hens).—First, J. H. Frame, Carlisle. Second, P. Eden, Manchester. Commended, G. Ure, Dundee. Highly Commended, J. Millar, Glasgow. Very Highly Commended, J. Huie, Glasgow.

POWTERS (White hens).—First, H. Hawkins, Belfast. Second, G. Ure, Dundee. Highly Commended, J. Huie, Glasgow.

POWTERS (Blue hens).—First, G. Ure, Dundee. Second, J. Ruthven, Glasgow. Very Highly Commended, J. Huie, Glasgow.

POWTERS (Red hens).—First and Second, G. Ure, Dundee.

POWTERS (Yellow hens).—First, G. Ure, Dundee. Second, J. Huie, Glasgow.

POWTERS (Any other colour).—First, J. Muir, Glasgow (Chequer). Second, M. Stuart, Glasgow (Mealy).

A Silver Medal, presented by J. Wallace, Esq., for Carriers (any colour) bred in 1862, J. Huie, Glasgow (Black). Very Highly Commended, J. Wallace, Glasgow. Highly Commended, J. Huie, Glasgow.

CARRIERS (Black cocks).—First, H. Martin, Glasgow. Second, G. Ure, Dundee. Very Highly Commended, J. H. Frame, Carlisle.

CARRIERS (Dun cocks).—First, T. Colley, Sheffield. Second, J. Wallace, Glasgow.

CARRIERS (Black hens).—First, J. R. Rennards, Helensburgh. Second, P. Eden, Manchester. Very Highly Commended, W. B. Van Haansbergen, Newcastle.

CARRIERS (Dun hens).—First, T. Colley, Sheffield. Second, J. R. Rennards, Helensburgh. Very Highly Commended, T. Colley.

A Silver Medal, presented by G. Ure, Esq., Dundee, for Almond Tumblers bred in 1862, P. Eden, Manchester.

SHORT-FACED TUMBLERS (Almonds).—First and Second, M. Stuart, Glasgow.

SHORT-FACED TUMBLERS (Mottles, any colour).—First, P. Eden, Manchester (Mottles). Second, G. Ure, Dundee (Black Mottles). Very Highly Commended, W. H. C. Oates, Newark (Red Mottles).

SHORT-FACED TUMBLERS (Any other colour or variety).—First, R. Fulton, London. Second, M. Stuart, Glasgow (Red Agates). Cock Very Highly Commended, H. Martin, Glasgow. Highly Commended, R. Pickering, Carlisle (Red). Commended, M. Stuart, Glasgow (Kites).

A Silver Medal, presented by E. Gilroy, Esq., Lanark, for Barbs (any colour) bred in 1862, P. Eden, Manchester (Black).

BARBS (Cocks).—First, J. H. Frame, Carlisle (Black). Second, P. Eden, Manchester. Very Highly Commended, J. H. Frame (Red).

BARBS (Hens).—First, P. Eden, Manchester. Second, J. Green, Overton (Black).

A Silver Medal, presented by Lord Binning, for Fantails (any colour) bred in 1862, J. Wallace, Glasgow. Very Highly Commended, J. H. Frame, Carlisle (White). Highly Commended, D. Stewart, Perth (White). Commended, F. Else, Dundee.

FANTAILS.—First, J. Huie, Glasgow. Second, G. Ure, Dundee. Very Highly Commended, G. Ure (White). Highly Commended, F. C. Parker, Dundee.

JACOBS.—First, A. L. Silvester, Birmingham. Second, J. Ruthven, Glasgow (Yellow). Very Highly Commended, N. Morton, Ballymena, Ireland (Red). Highly Commended, J. R. Rennards, Helensburgh.

TRUMPETERS.—First, J. Bell, Newcastle. Second, H. Yardley, Birmingham. Very Highly Commended and Highly Commended, G. Ure, Dundee (Black Mottled). Commended, N. Morton, Ballymena, Ireland (Mottled).

TURBITS.—First, A. L. Silvester, Birmingham. Second, F. Else, London. Very Highly Commended, J. W. Edge, Birmingham. Highly Commended, J. R. Rennards, Helensburgh.

OWLS.—First, F. Else, London. Second, J. R. Rennards, Helensburgh. NUNS.—First, J. R. Rennards, Helensburgh. Second, F. Else, London. Very Highly Commended, J. W. Edge, Birmingham.

MAGPIES.—First, W. M. Gilmour, Hamilton. Second, N. Morton, Ballymena, Ireland.

COMMON TUMBLERS.—First, J. Sephton, Prescot. Second, J. W. Edge, Birmingham. Very Highly Commended, J. Sephton. Highly Commended, A. Morrison, Glasgow (Red Mottles).

OTHER BREEDS.—First, F. C. Parker, Dundee (Lace Fantails). Second, A. L. Silvester, Birmingham. Third, W. H. C. Oates, Newark (Isabels). Very Highly Commended, H. Yardley, Birmingham (Swallows). Highly Commended, W. M. Gilmour, Hamilton (Blue Priests).

CANARY BIRD DEPARTMENT.

EXTRA PRIZES.

A handsome piece of Silver Plate, and £1 1s. as a second prize, presented by the Association, for Scotch fancy, the produce of 1861, or prior thereto (Yellow Cock and Buff Hen, or Buff Cock and Yellow Hen). First, G. Buchanan, Glasgow. Second, W. Hunter, Kilbirnie.

SCOTCH FANCY.—A special prize, presented by G. Buchanan, Esq., for Yellow or Buff Cock. *Yellow Cocks*.—First and special, G. Buchanan, Glasgow. Second, W. McLeod, Glasgow. Third, J. Fulton, Beith. Fourth, T. McMurtrie, Kilmarnock. *Buff Cocks*.—First and special, D. Stewart, Perth. Second, A. Ferguson, Kilmarnock. Third and Fourth, D. Gunn, Glasgow.

A special prize, presented by the "Thistle Ornithological Society," Glasgow, for Yellow or Buff Hen. *Yellow Hens*.—First and special, G. Masterton, Glasgow. Second, D. Duncan, Carron. Third, G. Buchanan, Glasgow. Fourth, D. Gunn, Glasgow. *Buff Hens*.—First, G. Masterton, Glasgow. Second, S. Brown, Glasgow. Third, G. Buchanan. Fourth, J. Johnston, Kilmarnock.

BELGIAN FANCY.—A special prize, presented by Messrs. Paterson and Buchanan, for Yellow or Buff Cock. *Yellow Cocks*.—First, J. Goddard, Kendal. Second, D. Talbert, Dundee. Third, J. Ruthven, Glasgow. *Buff Cocks*.—First and special, J. Huie, Glasgow. Second, J. Toward, Glasgow. Third, Mrs. Clark, Glasgow. *Yellow Hens*.—First and special, J. Harding, Dumfries. Second, Mrs. Clark. Third, J. Simpson, Edinburgh.

A special prize, presented by M. Stuart, Esq., for Yellow or Buff Hen. *Buff Hens*.—First, J. Ruthven, Glasgow. Second, J. Simpson, Edinburgh. Third, Mrs. Clark, Glasgow.

PIEBALDS.—A special prize, presented by the Association, for Yellow or Buff Cock or Hen. *Yellow Cocks*.—First, W. M. Murray, Edinburgh. Second, R. Borland, Glasgow. Third, N. M. Leod, Glasgow. *Buff Cocks*.—First and special, N. M. Leod, Glasgow. Second, W. Clason, Glasgow. Third, J. M. Kimmin, Govan. *Yellow Hens*.—First, A. Riddell, Carron. Second, M. Henderson, Ardrossan. Third, J. Fulton, Beith. *Buff Hens*.—First, J. Armstrong, Glasgow. Second, N. M. Leod. Third, R. Lawrie, Glasgow.

GOLDFINCH MULES.—*Yellow Cocks*.—First, W. Wilson, Manchine. Second, G. J. Barnaby, Derby. *Buff Cocks*.—First, W. Bainbridge, Ayr. Second, R. Foster, Carlisle.

The following were the Judges:—Of Pigeons:—E. L. Corker, Esq., Croydon, Surrey; and D. Wolstenholme, Esq., Gray's-Inn Road, London. Canaries:—Messrs. W. White, Renfrew; J. K. Johnstone; J. Graham, Kilmarnock; G. Ayton, N. M'Lean, and D. Johnstone, Glasgow.—(*Glasgow Herald*.)

LEGS OF GAME BANTAMS.

FOR the information of your correspondent in last week's paper on the subject of "Yellow-legged Game Bantams," I write to say that for the last two years I have had a Yellow-legged cock of that breed, a bird that I am very proud of. At the commencement of last breeding season I shut him up with a Blue or Slate-legged hen, trusting that the mixture of blue and yellow would make green as the paint does, but I was disappointed—my birds were principally Slate-legged, a few White-legged, and one cockerel Yellow-legged like his father. I showed him at Birmingham, he was highly commended and sold at the price I put upon him—viz., £3. A cockerel and two pullets, Slate-legs of the same hatch took a prize at the Sparkenhoe Show at Leicester last September, which clearly proves that the prizes are not solely for Willow-legged birds. Last year I had also a Yellow-legged Black-breasted Red Game cock, which I mated with some Blue and Willow-legged hens. The result invariably

was Blue-legged chickens from Blue-legged hens, and Willow from Willow-legged mothers, with a very few exceptions where the yellow peeped out, in which cases I destroyed the chickens, well knowing the prejudice against the yellow legs in Game fowl, though I do not believe that hitherto it has extended to the Game Bantam class.

Would it not be much better if there were some fixed standard to go by? so as to make it impossible that an exhibitor should say, "Oh, Mr. So-and-So is Judge. Well, it is no use sending my fowls, he won't give a prize to any but Willow-legged ones." What a drawback to a show! Why should not each show publish in the catalogue of prizes the particular points of the fowls in each class requisite to enable them to take a prize? It would save a world of trouble, and a great deal of disappointment and dispute.—W. P.

CORK POULTRY SHOW.

THE third annual Exhibition of the South of Ireland Poultry Association was held on the 7th and 8th of January, in the large rooms of the Athenæum at Cork. The rapid and steady progress made by this Society must be most gratifying to its promoters; for it has now attained a position that would reflect credit on any town in the United Kingdom.

The following is the prize list:—

SPANISH.—First, Miss De Courcy Drevar. Second, F. Hodder. *Chickens*.—First, F. Hodder. Second, Mrs. Dring.
DORKINGS (Coloured).—First, Mrs. Webb. Second, Mrs. Dring.
DORKINGS (Silver-Grey).—First, A. E. Usher. Second, T. O'Mahony. *Chickens*.—First and Second, A. E. Usher.
DORKINGS (White).—Prize, T. O'Mahony.
DORKINGS (Coloured or White).—*Chickens*.—First, T. O'Grady. Second, F. Hodder.
COCHINS (Buff or Lemon).—First, J. C. Perry. Second, W. R. Burke.
COCHINS (Partridge or Grouse).—First and Second, J. C. Perry.
COCHINS (White).—First, T. W. Zurhorst. Second, F. Hodder.
BRARMA POOTRAS.—First, P. Heffernan. Second, N. Breslin.
GAME (Black or Brown Reds).—First, J. C. Perry. Second, W. A. Roberts. *Chickens*.—First, J. M. Roche, M.D. Second, J. C. Perry.
GAME (Duckwing or Piles).—First, P. Cronin. Second, J. M. Roche, M.D.
POLANDS (Gold-crested).—Prize, Rev. J. O'Sullivan.
POLANDS (Silver-crested).—First, Mrs. Dring. Second, Miss A. E. Pike.
POLANDS (White or Yellow-crested).—First and Second, Miss De C. Drevar.
HAMBURGERS (Rose Comb, Gold).—First, Mrs. Dring. Second, T. Hare.
HAMBURGERS (Rose Comb, Silver).—First, Mrs. Hodder. Second, T. Hare.
BANTAMS (Sebright).—First, A. E. Usher. Second, T. O'Grady.
BANTAMS (Silky).—First and Second, Mrs. Hodder.
BANTAMS (Smooth-legged).—First, J. Penrose. Second, Miss A. E. Pike.
BANTAMS (Feather-legged).—Prize, J. Donegan.
ANY OTHER VARIETY.—First and Second, J. C. Perry (Crève Cœur).
TURKEYS.—First, R. Briscoe (Cambridgeshire). Second, J. Bruce (Norfolk). *Pouls*.—First, A. E. Usher (Cambridgeshire). Second, A. C. Sayers (Cambridgeshire).
GRESE.—First, J. Bruce (White Embden). Second, T. O'Grady (Toulouse).
GOSLINGS.—First and Second, A. E. Usher (Toulouse).
DUCKS (Aylesbury).—First, Mrs. Webb. Second, F. E. Curry. *Ducklings*.—First and Second, R. Cliffe.
DUCKS (Rouen).—First, R. Cliffe. Second, Dr. Parker. *Ducklings*.—First, R. Cliffe. Second, J. C. Perry.
DUCKS (Any other variety).—First, W. R. Burke (Muscovy). [Second, Mrs. Hodder (Call).]
BEST DORKING COCKEREL.—A Medal, given by Mrs. Usher, F. Hodder.
BEST WHITE-FACED SPANISH COCKEREL.—A Medal, given by Mrs. Lyons, F. Hodder.
BEST WHITE-FACED SPANISH, DORKING, AND COCHIN PULLETS.—A Medal, given by Dr. Harvey, F. Hodder.

PIGEONS.

CARRIERS, Black.—First, J. Perrott. Second, A. E. Usher. A very superior class.
CARRIERS DUN.—First, P. Goulding. Second, J. Perrott.
CARRIERS, Blue, or any other colour.—First, J. Dowling. Second, J. Lloyd.
POWTERS, Black Pied.—First, H. Hawkins. Second, Dr. Harvey.
POWTERS, Blue Pied.—First, H. Hawkins. Second, Dr. Harvey.
POWTERS, Red Pied.—First, H. Hawkins. Second, Dr. Harvey.
POWTERS, White.—First, H. Hawkins. Second, Dr. Harvey. A very good class.
POWTERS, Any other colour.—First, Dr. Harvey (Yellow). Second, J. Perrott (Splash).
ALMOND TUMBLERS, Short-faced.—First, Dr. Harvey. Second, J. Perrott.
KITE TUMBLERS, Short-faced.—First, T. Hare. Second, Dr. Harvey.
SHORT-FACED TUMBLERS, Baldheads or Beards.—First, J. W. Edge (Bald). Second, Dr. Harvey (Blue Bald).
SHORT-FACED TUMBLERS, Mottles, or any other colour.—First, T. Hare (Mottles). Second, Dr. Harvey (Agates).
FANTAILS, White.—First, J. Perrott. Second, R. J. Nash.

FANTAILS, Black, or any other colour.—First, R. Lane (Blue). Second, R. Daly (Black).
JACOBS, Yellow or Red.—First, J. Lloyd (Yellow). Second, J. Slattery (Red).
JACOBS, Other colours.—First, T. Babington, jun. (Black).
BARBS.—First, J. Perrott (Black). Second, Miss A. E. Pike (Red).
OWLS.—First, W. R. Baldwin (Blue). Second, A. E. Usher (Silver).
TURBITS.—First, Miss H. S. Pike (Yellow). Second, J. Dowling (Blue).
TRUMPETERS.—First, J. Perrott (Mottled). Second, T. Babington, jun. (White).
NUNS.—First, J. W. Edge. Second, T. O'Grady.
MAGPIES.—First and Second, P. Goulding (Yellow and Black).
COMMON TUMBLERS, Baldheads or Beards.—First and Second, J. W. Edge.
COMMON TUMBLERS, Other varieties.—First, J. W. Edge (Speckled). Second, R. Lane, Black Mottled.
COMMON TUMBLERS, Any other variety not classed.—First, J. Dowling, Dragons.
SWEEPSTAKES FOR CARRIERS.—Prize, P. Goulding, Dun Cock.
POWTER AND SHORT-FACED TUMBLER.—A Medal, given by Mr. J. C. Perry. H. Hawkins, Blue Powder and Almond Cock.

CAGE BIRDS.

CANARIES, Yellow.—First, F. Hodder. Second, R. Lane. CANARIES, Green.—Prize, F. Hodder. CANARIES, Mealy, or any other colour.—First, Mrs. A. E. Usher. Second, F. Hodder, Lizard. MULES, Linnet.—Prize, Rev. J. O'Sullivan. BLACKBIRD.—Prize, W. Miles. THRUSHES.—First, J. Lloyd. Second, J. Fitzgerald. NIGHTINGALE.—Prize, Rev. J. O'Sullivan. BLACKCAP.—Prize, Rev. J. O'Sullivan. WOODLARK.—Prize, Rev. J. O'Sullivan. SKYLARKS.—First, R. Daly. Second, F. Hodder. BULLFINCH.—Prize, Mrs. Hodder, Talking Bullfinch. (Speaks several sentences very well.) GOLDFINCHES.—First, F. Hodder. Second, J. Corcoran. LINNETS.—Prize, D. Carbery.

JUDGES.—*Poultry*: J. Blandford, Esq., Ashgrove, Cork; W. Corbett, Esq., Castleconnell, Limerick. *Pigeons*: W. B. Tegetmeier, Esq., Muswell Hill, London; John Austin, Esq., Panorama, Terrace, Cork. *Cage Birds*: W. T. Jones, Esq., M.D., Cork; Adam Parker, Esq., Landscape, Cork.

WILD DUCKS REARED WITH TAME.

I WILLINGLY concede to the request of your correspondent "J. R." for further information respecting my former pets, the wild Ducks. Permit me to add, we invariably pinioned all the offspring as well as the primitive generation produced from the eggs of birds still in a state of nature, as they all proved themselves not to be certainly depended upon in case of any sudden alarm or stress of weather, of which they were peculiarly susceptible. The approach, for instance, of any strange dog or cat caused them to rush headlong into the water, dive about, and make their best repeated efforts to take wing until they became really exhausted. To show their power of discrimination on the other hand, our own dogs and cat were always running about quite unregarded, and all three of them frequently lay down and stretched themselves listlessly about in the sunshine, in the closest proximity to the Ducks—"a happy family." So much did this difference to them and strangers manifest itself, that I have seen the Ducks walk softly to the dogs and snap at their hair when they wished to drive them away from a spot they themselves coveted. Any positive change of apparel in my sister to that she customarily wore when among them, caused them at once to move away, as they always did from an absolute stranger. It was evident they depended at once entirely on the eye when thus withdrawing to a distance, for a kind word or two from my sister instantly recalled them, though for a few minutes or so they might still regard her very suspiciously. Usually they fed without hesitation from the hand. I never tried to breed between the true Mallard and the tame Duck. In justice to their constancy, I never knew any tendency of disposition on their parts to bigamy, or wanderings after other female specimens of waterfowls that might be with them of a different variety. On the contrary, I have seen a Mallard fight desperately with a strange odd male of his own species on his venturing too near the mate of his particular selection. They always paired for the years we kept them, as we never to the best of my recollection bred them beyond five or six generations, as they then proved so much less beautiful. The white collar round the neck of the Mallard then became much broader and far more irregular; and another great token of domestication carried beyond due limit was, the appearance of white in the few longest flight-feathers of the ducklings' wings. In all such cases we immediately resorted to wild-laid eggs again, and put away those previously reared altogether.

Having given my experience of the Mallards of the true wild Ducks, however ungallant it may appear, I must say a word or two on the Ducks only. They seemed inclined to stray from

allegiance to their mated partners. One wild Duck particularly, after breeding a couple of seasons with her own Mallard, at once shook him off on my placing a drake Pintail on the water. It was evidently a case of love at first sight, for she swam about the new comer caressingly, though he appeared evidently alarmed and averse to her overtures of affections. From that hour she fought her old partner. Winter passed by, and the next spring the Pintail seemed to have become a convert to her blandishments, for they nested and produced seven or eight young ones. Six were ultimately reared, and, strangely, proved all drakes. They were most curiously-marked "hybrids," having much of the outline of the father—viz., the Pintail's bill, length of body, dark legs, &c.; but when moulted they all assumed the chestnut crop of a true Mallard, and still more singularly, a triple row of curled feathers in the tail; the proper tail-feathers being also much longer than a wild Mallard's. They were considerably larger than either of their parents, but proved altogether hybrids, never associating with their companions. At length, although exceedingly beautiful, we parted with them.—EDWD. HEWITT, *Spartbrook, Birmingham.*

ASCERTAINING THE SEX OF GOSLINGS.

At the late Birmingham Show I claimed from Mr. Manfield the first-prize pen of young white Geese. I exhibited them for the first time at Manchester, when they were disqualified, two if not all of them being ganders. Mr. Manfield also exhibited a pen there, and it is rather a singular fact that they were disqualified for the same reason.—J. MUNN.

[We know of no mode of ascertaining the sex of live young Geese: therefore there is no delinquency in the above cases; but we think Mr. Manfield ought to let Mr. Munn have Geese in exchange for the superfluous ganders.—EDS.]

HYBRID BETWEEN THE COMMON PHEASANT AND THE SILVER PHEASANT.

HAVING noticed a query on this subject in your last Number, I write to inform you that a gentleman in this town has a stuffed specimen of this hybrid, a male bird. It was shot some years ago near Raby Castle, the seat of the Duke of Cleveland, where some Silver Pheasants had been a short time before turned loose. The plumage is certainly very beautiful, and (if it is possible to judge from a stuffed bird), the size and shape are good.—C. P., *Darlington.*

You are mistaken in saying that there has never been a cross between the common and Silver Pheasant. There are several places here, in Yorkshire, where they breed in the preserves every year. The cross is generally a Pied variety; but it is not desired or highly prized by gamekeepers; they consider the birds weak and tender, and not easily reared. In the "Zoological Proceedings" of 1836, is mentioned a cross between the common Pheasant and the Silver Pheasant, and between the common Pheasant and the Golden Pheasant.—S.

THE WARBLERS.

I COME now to the migratory insect-feeding warblers, many of which are our finest songsters. They arrive in spring, about the 10th of April, when the first broods of caterpillars are being hatched by the return of warm weather, and on them and the larvæ of other insects they raise their own broods; and, as summer advances, insects of various kinds are added to their bill of fare. They arrive in this country when insect life is first awakening from the sleep of winter, stay with us while these pests are active, and depart in autumn when the colder nights warn them their food will soon be less easy to procure. Thus by an allwise decree they are sent to assist in checking that rapid increase of insect life; silently and almost unnoticed they spread over the whole country doing their mission of good, to assist in the protection of every crop. Yet I have said birds are not an unmixed good, and truth compels me to say that many, perhaps nearly all, of these migratory insect-feeding birds do take tithe

of the fruit which they have assisted in saving from utter destruction by insects.

In enumerating the warblers, the Nightingale—the most delightful of all songsters—must head the list; second in the choir comes the Blackcap, then the Garden Warbler, followed by the Wood Wren, Willow Wren, Chiffchaff, Whitethroat, Lesser Whitethroat, Wheatear, Redstart, Furze Chat, Grass-hopper Warbler, Reed Warbler, and Sedge Warbler. Each of these birds has its favourite haunts and insect-food. Thus it will be seen that they all contribute to the destruction of insect pests; nevertheless, it must not be forgotten that those that are most active in the gardens and orchards, eating and keeping in check the insects that would destroy the buds, blossom, leaves, and fruit of the bushes and trees—as, for instance, the Blackcap, Whitethroat, Garden Warbler, and Willow Wrens—are just those that take most tithe of fruit for their pains.

Gardeners, generally, are not well acquainted with the habits of birds, nor do they often know all the species that visit their gardens and plantations; most of these are plain-coloured birds, and by the unobservant may be passed by as Sparrows, or certainly under that all-including title—*small birds*. The object of these papers is to awaken in gardeners a spirit of observation, that they may learn how best to save their fruit. I do not deny that small birds eat fruit. I am well aware that many are very annoying in their attacks on various crops; but then, if we are to kill-off every bird that is in the least injurious, how shall we save our crops from utter destruction from the increase of insects? That birds do an immense amount of good is an established fact, and without them few crops can be depended on; that which I have always advocated is to save the birds as our best friends and allies against the armies of insects that would otherwise devastate our crops. At the same time, I would endeavour, as far as possible, to protect the sown seeds and rising crops, as well as the ripening seeds and fruit, from their taking too heavy a tithe, or too high wages for their labour. The case will stand thus: The closer you kill-down the birds the more troublesome will be the insects, and consequently the smaller and smaller becomes the crop. But where the birds are in full force so as to enable them, each sort, to keep in check their favourite insect-food, then (weather permitting, for the birds cannot alter the season) will the trees be enabled to produce fruit, though the birds may claim a share if they are not kept off at the proper time. Or, it amounts to this: Will you kill-off the birds and preserve the insects that you may have no fruit to be bothered about? or will you save the birds to destroy the insects, and so, taking the chance of the season, have a good crop and some trouble to protect it? The question is, Is a large crop worth that trouble?—B. P. BRENT.

BEE SEASONS IN SURREY.

HAVING taken great interest in, and derived much instruction from, the communications on bee-keeping furnished by various of your contributors, I feel pleasure in sending you an account of my experience in bee-keeping during the seasons of 1861-2, in this part of the country (southern part of West Surrey). Both seasons have been bad, particularly the latter year.

I keep my hives in houses, made to hold six in two tiers. I began the season of 1861 with six stocks, of which two gave out three swarms each, three others gave one swarm each, and one stock did not swarm—nine swarms altogether.

Wishing to increase the number of my stocks, I hived them all separately. The first swarm came off on the 4th June; the next swarm from another hive came out June 13th. Up to this time not a drone was seen to come from any of my hives. The next day I saw two or three drones come from the hive that swarmed June 4th, ten days after the swarm; and again drones did not issue from the hive that swarmed June 13th until ten days after the swarm. I think that very late for drones to make their appearance. Both these hives gave three swarms each; after which I placed a small glass on one of them, and took about 3 lbs. of honey. From the two first swarms of these stocks I also took small glass supers of honey. Of the two second swarms or casts one did very well, the other not so well and it died last winter, but not for want of food. Of the two third swarms (or colts, or smart, as some people call them), which are said by some not to be worth keeping by themselves, both did very well, one of them becoming in the autumn the strongest of all my hives. Indeed, the bees were clustered outside so

strong on the 1st of October that I determined to put on a small glass super, with a little empty comb in it, to see if they would deposit any honey, which they were then collecting in great quantities from the ivy. I took a small quantity from the super on the 7th October; but it tasted so strong of the ivy that a very small bit nearly made me sick, and I did not dare to touch it again. Have any of your correspondents noticed a similar nauseous taste in honey taken so late?

The doings of this third swarm the next season (1862) will be particularly noticed hereafter, because it shows that in some localities second and third swarms, although small, as the one referred to was, can be hived by themselves and expected to do well that and the following season, notwithstanding the statements to the contrary contained in most books on bees. Of the other stocks and swarms I have nothing particular to note. The autumn of 1861 found me with fifteen hives—the six stocks I commenced that season with, and the nine swarms. I improperly deprived two of the stocks of most of their stores in August. They were not able to replace their store, did not prosper after, and died the following winter—a caution to me for the future. These two deaths, together with that of the second swarm previously referred to, left me with twelve stocks to commence the season of 1862. The results of the year 1862 shall be given in another communication.—A SURREY BEE-KEEPER.

IN-DOOR APIARIES, AND RUNAWAY SWARMS.

IN reply to the queries of "A NORTH-STAFFORDSHIRE BEE-KEEPER" in No. 92, of the 30th of December, 1862, I have the pleasure of sending the following remarks:—

From what experience I have had of keeping bees within doors, I have no hesitation in recommending this mode to any apiarian not possessing a regular bee-house. Its formation may thereby be saved (and they are in too many instances anything but ornamental structures), should he have a spare room or closet in his dwelling or office-houses; or a staircase window may be turned to good account for a like purpose, always providing that the situation be dry, quiet, cool, and airy, and the hive brought to within an inch or two at farthest of the external atmosphere, otherwise dysentery would in all probability set in. Even the village cottager, who has but his garret, may there place his bees beyond the reach of depredators, independent alike of either milk-pans or straw-hackle; if unlatched so much the better, as then there is no obstacle to his fitting at once his box-front to the bevel of the roof, an entrance-slit being cut in the boards, to which the slates are attached to tally with a corresponding one in the box, over which a slate can be raised by a couple of wedges three-quarters of an inch thick at outer end. This admits of space enough for the bees crowding in at the approach of a shower. Should the box be placed half-way up the roof, and top and bottom furnished with bar and slides, or like convenience, he may super, nadir, or work collaterally to his heart's content, only taking care that the skylight be so far moveable as to admit of the exit of any bees escaping during such operations, as they fly to the light. The cottager may thus very simply establish an apiary; and I have seen that apartment converted into an extensive aviary for breeding canaries or other birds; and should the two be combined he could in his leisure hours survey the operation of his bees through the window of his hives, solaced by their pleasant busy hum and the merry song of his birds.

I have found bees thrive as well, if not better, 20 to 30 feet, or even 40 feet, from the ground with a north aspect, than in my Gordon-hives at as many inches when due S. or S.E. However, our situation is not an exposed one; and, in addition, the force of the northerly blast is broken by old trees beyond the garden wall. At such an altitude the bee-keeper is of course necessitated to work exclusively on the depriving or other plan to prevent swarming. Were they to issue they would generally be lost, either from flying a long distance before settling, or alighting on a tree-top.

"A NORTH-STAFFORDSHIRE BEE-KEEPER" wishes to learn the history of an observatory-hive to which I some time ago made allusion, to detail which in a measure involves a description of its predecessor from whence it sprung, and which will equally serve his purpose. In close proximity to a little press containing the boxes of a vagabond stock, located for many years in our

roof (a description of the working of this and other roof-hives your correspondent will find in *THE COTTAGE GARDENER*, No. 589, 10th of January, 1860), was a little half staircase window facing the north, there serving the purpose of a press, and into which I resolved to place a stock. In order to bring the inmates nearer the outside, I removed some 3 inches of mastic plaster, then a pair of thick shutters, the fruits of the window-tax blockade, and cutting an entrance through the centre of the bottom of the frame placed on a shelf flush with the sill. On the 7th of June, 1859, I had a small first swarm (2 lbs. 14 ozs.), in a Stewarton-box, and on the 30th of the same month I hived another a large swarm (5 lbs. 11 ozs.) in another Stewarton, and placed it underneath the preceding. The united colony wrought well—quite equal to any of my other strong stocks, the beginning of September finding them with three boxes full, the nett contents of which weighed 43 lbs. 13 ozs., having previously yielded a handsome two-guinea super. I removed the lower box-comb so soon as the inmates had ascended for the winter, and instead introduced an eke: this box was returned the following season as soon as they required room. Beginning of March, 1860, I again weighed the hive, and found the nett contents 33 lbs., or a deficiency of 10 lbs. 13 ozs. against the six months' keep of this strong colony. That season was inferior to its predecessor, but, doubtless, partly owing to its immense population, the hive yielded a super rather heavier than in the preceding seasons, and now, having fairly outgrown my space in height, I resolved to appropriate its contents; but, fearing a large part of the population would return to the window and be troublesome, although united to another stock at a different stance, I put a young queen and a small body of workers in the empty observatory in its stead, and, after a hunt through the remaining five compartments of the Stewarton, at last secured and destroyed the old monarch, and united her subjects with those of the observatory. The nett contents of the three upper boxes containing the honey weighed, after the bees were removed, 49 lbs. 7 ozs.

I fed the large population of the observatory liberally with the inferior part of the contents of their old hive, and an abundant supply of sugar syrup. Comb-building went on briskly in the full light, and as the season advanced I had a good opportunity of observing the effect of the lowering temperature on the inmates till it reached the extreme point of 25° of frost on the memorable morning of the 24th December. Contrary to my expectation they came through in fine order, and were kept regularly supplied with food till the spring was far advanced, when a long tack of northerly wind caused me to cease feeding during its continuance, fearing to disturb them unnecessarily, and trusting to their surplus store. In this I quite miscalculated, for to my no small chagrin I one day found all still, the bees packed-up between the combs, and after sweeping them off the comb saw that not a cell contained food. Had I then the experience I accidentally became possessed of last spring, that the majority of the population of a hive when in that benumbed, starved, and seemingly dead condition for a short time, may be resuscitated by being brought in contact with a gradually increasing temperature, this observatory-hive might still be in full operation.

Your Staffordshire correspondent's remaining query as to how vagrant swarms prefer a high situation, such as a roof church-tower, &c., can only be accounted for by their known instinct in dispatching scouts so soon as swarming becomes imminent, to select some suitable situation to which the young colony may migrate, and that the above or some hollow tree is the only place with a sufficiently contracted entrance to exclude marauders to which they can gain undisturbed admission, besides, as your correspondent suggested, possessing an equable temperature, to which may be added the suitable considerable bevel of the roof, removing all dampness and débris. It is singular the predilection bees have for such a situation; more particularly when once a swarm has established itself, others are sure to follow. I have often watched with interest the daily increasing surveying-roof party of scouts, the invariable precursors of a swarm. If they suddenly cease their visits it may be concluded they have come off and been captured; but should the space contain in addition the empty comb of a defunct colony, they will even abandon their new hive after working therein. That bees in such situation thrive and prosper is undoubted; aided doubtless by generally selecting a north aspect, their dormancy is more complete, and the drain on their store at a minimum, so that they rarely perish from starvation. I have myself measured stretches of comb in one roof extending to 6 feet in length; in another a few miles distant

the proprietor, on plundering several of the roof-hives, required to employ washing-tubs to contain the mass of combs of various hues. The roof of the Lord of the Manor, as recorded in No. 9, possesses quite a talismanic influence, and is a standing terror to all the surrounding cottage bee-keepers. I related in that Number the chase of one after a swarm. It is, however, fair that I should mention it has since come to my knowledge, that although the details of that story were as related, still my informant was not aware that the stock from which the swarm proceeded was placed at a farm standing nearer the manor-house a good deal than his own dwelling.

The last laird had a great liking to the bees, but failed to induce them to work-out into boxes fitted-up for their reception—very likely from not having sufficiently contracted the space where they were located—but consoled himself by having always the lath and plaster removed from the divisions where the bees established themselves, boards kept in their place with small buttons being substituted; so that, with the aid of a little smoke, the butler could promptly procure, when ordered, a piece of beautiful honeycomb fresh from the hive to sweeten the repast of his friends. His successor being no apiarian, and fearing the bees might penetrate to the very nursery, had them removed and the seams papered-up with stout paper; but notwithstanding, the following season brought as usual a large prime swarm, which, nothing daunted, occupied the favoured site, having cut a suitable entrance through the paper. They survived last winter, and were very strong in spring, when they were mercilessly banished—not, however, without inflicting signal vengeance on their destroyers. The whole slates were removed from the north end, which was covered with roofing felt before they were replaced; and it now remains to be seen if this prove a sufficient preventive against the inroads of our indefatigable little favourites.

—A RENFREWSHIRE BEE-KEEPER.

BOTTLE-FEEDERS FOR BEES.

One Who Has Bees would like to know what kind of bottle is used for feeding, and how it is applied to straw skeps having a four-inch opening on the top, with the combs built across it.

[Any kind of bottle will answer the purpose, but those with short necks and of a squat shape are the most convenient. For occasional feeding in spring, nothing answers better than a common four-ounce or six-ounce medicine-phial; whilst for copious feeding in autumn, an ordinary pickle-bottle leaves nothing to be desired. The best arrangement for straw skeps with a four-inch opening, is that recommended by "A DEVONSHIRE BEE-KEEPER" for wooden hives, and delineated in Vol. XXV., page 42. The opening in the top of the hive is covered with a piece of perforated zinc, on which is placed a block of wood 5 inches in diameter, with a central hole to receive the bottle-neck. The bottle filled with liquid food, and having its mouth covered with a piece of coarse cap-net, the meshes of which are not less than a sixteenth of an inch in diameter, should be quickly inverted over the opening in the wooden block, so that any food that escapes may run into the hive, and its neck being inserted therein, it will stand steadily in an inverted position, whilst the food remains perfectly suspended by atmospheric pressure without a drop falling, until the whole is appropriated by the bees. If very rapid feeding be desired, the net may be drawn out after the bottle is inverted, thus bringing the food more completely in contact with the perforated zinc, and enabling the bees to remove it in a wonderfully short time. The points to be attended to in adapting the perforated block to a bottle are, first to make the hole sufficiently large to admit of the neck passing freely in and out when enveloped in the neck; whilst the block itself should be of such a thickness that, whilst the bottle-mouth rests on the perforated zinc underneath, the upper side of the block fits close to the surface of the bottle. This is very important; because, if strange bees or wasps are able surreptitiously to obtain a taste of the forbidden sweets from the outside, serious injury, or even the total destruction of the colony, may very probably result from a combined attack, which few stocks are able successfully to resist. In conclusion, we may add that a long and very extensive experience warrants us in fully endorsing the conclusion of our able and esteemed correspondent "B. & W." that the inverted bottle is indeed the *ne plus ultra* of bee-feeders.]

EVENING THOUGHTS IN JANUARY.

(From the German of ADALBERT BRAUN.)
BY "A DEVONSHIRE BEE-KEEPER."

WITHIN my little garden
Stands also a bee-house,
And bees therein protected
From fly tomtit or mouse.
How quietly they're sitting!
And little trouble give,
Beyond the needful watching
That undisturb'd they live—
That all, indeed, are living
In strong unbroken health,
And, in the brood-nest hanging,
Consume their hoarded wealth—
That in the dwindling store-room
Sufficient stores remain,
Until the rape-platt donnett
Its blossom dress again!
Thus daily do I visit
My garden and my bees,
Neglecting thereby often
My dinner and my ease.
Thank God! they all were humming
Within their hives to-day;
Nor could I find a symptom
Of hunger or decay.
And yet what ardent longing
I feel, O Spring, for thee!
My darlings' gleesome frolics
Are happiness to me!
How would this anxious longing
Consume my very breast,
But for a little being
So full of love and jest,
In heat or cold that prattles
Around me ev'ry day,
And stills the throes of longing
By commune blithe and gay.
Ye bee-keepers can value
A joy that is complete;
It is my wife—the darling
Whose lips are honey-sweet.
With e'en the richest bee-stand
Were joy and pleasure gone,
If my heart's queen were wanting
And I left here alone.
Thus her I love and honour,
No difference have we,
But oft-times go together
Our little pets to see,
Her kisses sweet removing
All sorrow from my breast,
And honied joys surrounding
Proclaim us highly blest.

—T. W. WOODBURY, Mount Radford, Essex.

OUR LETTER BOX.

POULTRY DIARY (A. Barker).—Its publication has ceased. We are an interested copy of "Johnson's Farmer's Almanac," which may be had in a cloth binding for 2s., and we rule the blank leaves according to our own requirements for eggs, &c.

SPANISH COCKEREY LOST AT THE CRYSTAL PALACE.—"Not having received back the single Spanish cockerel which I sent to the Crystal Palace Show; and Mr. Houghton, although he has taken great trouble, having been unable to ascertain what has become of him, I am induced to inquire whether this sort of loss has ever happened to any other of your readers. It is true that a bird was returned to me, but it was totally unlike the one I sent. Mine was bred by me from birds highly commended at Manchester, was the pick of about fifty chickens, and was itself commended at the Crystal Palace Show. The bird returned to me was worth about 2s. 6d.—R. B. FOSTERS, Brentwood."

THE MANCHESTER SHOW PRIZE LIST.—The first prize for old Spanish and Duckwing Game chickens, we are informed, should be "John Martin, Claines, Worcester," and not "John Martin, Bingley," as stated in this Journal.

BOYS' SCHOOL (Pater).—We advise you to send your sons to Dr. Behr's, Winton House, Manchester. We know several youths who have passed excellent public examinations after being under his charge; and they all speak most highly of the kind household treatment of Mrs. Behr.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JANUARY 20—26, 1893.	WEATHER NEAR LONDON IN 1892.				Sun Rises.	Sun Sets.	Moon Rises and Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				degrees.			m. h.	m. h.	m. h.		m. a.	
20	Tu	R. Sweet d. 1835. G.	29.691—29.532	32—27	S.E.	—	57 at 7	25 at 4	2 a 6	1	11 16	20
21	W	Sun's declin. 19° 57' s.	29.483—29.432	40—29	E.	—	56 7	27 4	27 7	2	11 33	21
22	Tu	Lord Bacon b. 1561.	29.511—29.379	53—28	S.W.	—	55 7	29 4	45 8	3	11 50	22
23	F	Agardh b. 1785. B.	29.629—29.277	50—38	S.	—	54 7	30 4	4 10	4	12 6	23
24	S	Boccone b. 1633. B.	29.486—29.411	56—40	S.W.	—	53 7	32 4	8 11	5	12 21	24
25	Scn	3 Scn. AFTER EPIP. CON. S. P.	29.985—29.564	48—19	S.W.	—	51 7	34 4	morn.	6	12 35	25
26	M	Dandelion flowers.	30.192—30.173	53—38	N.W.	—	50 7	36 4	29 0	7	12 48	26

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 43.9° and 32.3° respectively. The greatest heat, 58°, occurred on the 23rd, in 1834; and the lowest cold, 7°, on the 26th, in 1835. During the period 141 days were fine, and on 111 rai fell.

HINTS FOR RAISING A HARDY RACE OF CROSS-BRED HEATHS.



OST surprising is it in this age of botanical enterprise, with the high estimation in which gardeners hold Cape Heaths for decorating the conservatory and greenhouse all the year round, to find that no attempt has hitherto been made to cross them and their numerous garden varieties with the hardy European

kinds, so as to produce a perfectly hardy race suited to the open border. If the art were difficult, and the chances hopelessly rare, this might readily be accounted for; but as there are ample materials, and great facility, no fear need be entertained that a person with moderate skill, ordinary perseverance, and a slight botanical acquaintance with plants would fail. Individuals who follow such pursuits generally obtain more or less reward for their trouble, and abundance of that blessing to mankind, "the pleasures of hope," besides, the great gratification arising out of the unexpected accession of new and beautiful objects, the pleasures from which occur almost daily. When the prospects of obtaining such objects fail to be realised, anticipation yields the same balm to the mind, and thus, whilst it stimulates the operator to fresh action, also invigorates the animal powers, and increases the capabilities of enjoyment, for each succeeding set of seedlings always brings some interesting novelty which has been little expected. Mrs. Grant, of Laggan, sings, "What lovely prospects wait each waking hour, when each new day some novelty displays;" and as such novelties are almost sure to be realised by hybridisation, if patiently and attentively carried out, and as no one can be an enthusiastic cultivator of flowers without feeling desirous of seeing improvements effected, how better can such a desire be gratified, than by raising seedling varieties? Nothing can give greater pleasure to the lover of his garden than watching, through the various stages of their growth, his productions until they arrive at maturity, and burst forth to gratify the eye with their hitherto-hidden beauties.

It will, however, only be after a course of years, coupled with much care and perseverance, that the gardener will be able to bend the stubborn wild beauty to his will, and that the cross-bred plants will arrive at a state of perfection which never could have been anticipated when first the attempt was made to improve them, even by the most judicious use of the materials at

the hybridiser's command. And who can tell after all but that such efforts only help to do that which Nature herself has done oftentimes before without the aid of man? Still, care and cultivation uniformly develop certain qualities differing in each variety, which are only dimly perceived, or, perhaps, not at all seen in the wild or natural state, or only in such species as are capable of great diversity in their varieties. In Nature there are a system of development and a definite point of perfection, the approach to which constitutes improvement in each variety; and this is effected by crossing those varieties that have shown respectively the greatest advance in the direction desired, for the whole system abounds in varieties whose offspring is mongrel in race, uncertain in progeny, and variable in aspect, and from which circumstances alone fresh varieties are constantly produced, more and more developing qualities in some direction, and pointing to a standard which when reached would be perfection in that particular variety. Notwithstanding that less is due to chance than skill and judgment in the first instance, still the work of the hybridiser is simply to follow whither Nature leads him, selecting always that track in which there is the greatest promise of his securing the accomplishment of his desires.

The botanist considers hybridising plants as a sort of presumption to mend Nature, for he loves her for herself. A rustic beauty to him is "loveliest when least adorned," while the gardener loves Nature too, but not in her *deshabille*—for him she must be "clad in all her charms." The scientific man also considers hybrids as departures from Nature and interferences with the habits of plants, and calls them "Nature's bastards." Still "Nature is made better by Art, for that which adds to Nature is an art that Nature makes;" and the study of Nature does not lead to irreconcilable differences, but unity of purpose, for there is no difficulty in following the successive advances, or in discovering that there is no capriciousness in flowers, because those advances lead to correct results, and have real natural connections.

It, therefore, only requires skill and a moderate amount of perseverance to succeed in giving the hardness of the European Heath to the more tender ones from the Cape, and so produce an assortment of shrubs of great beauty for ornamenting the open border at all seasons of the year, similar to those which now decorate the greenhouse and conservatory. And there is no reason to suppose, from what has already been done with hardy Rhododendrons, but that success would crown the endeavours of all those who tried their skill in raising cross-bred Heaths, which would flourish in the open border, and withstand the rigours of our severest winters, like the beautiful little hardy moor Heath, *Erica carnea*.

The first and most essential point, therefore, to be attended to, in raising a race of cross-bred, hardy Heaths suited to the open border, will be to give a hardy constitution to the plants, by blending the hardness of the little moor Heath with some of the spring-flowering Cape kinds, and those hardy species, such as *E. tetralix*

ciliaris, cinerea, multiflora, vagans, and Mackayana, with the summer and autumn-flowering Cape ones, making the hardy kinds at first the male parent, for in so doing you not only have a large assortment of Cape sorts to experiment upon, but also the advantage of having them out-doors. It will, however, be very requisite for those persons who take up the subject in earnest, to obtain a full set of the hardy kinds and their varieties, and keep them in pots, so that the plants may be at all times ready in a portable form.

The process of hybridising plants being now so generally understood, it appears unnecessary to allude to it further than to remind the operator that self-fertilisation must be carefully guarded against, by removing the pollen-bearing parts of the flower before any pollen be dispersed, and that he must labour even more diligently than the industrious bee among his flowers, or his hives will produce no sweets. It may also happen that some of the first attempts at crossing the hardy European Heaths with the beautiful and more aristocratic varieties from the Cape, may prove failures, or that but little advance may be gained from the first crosses; still, by recrossing the hybridised seedling productions with a hardy kind, and more experience in the selection of sorts for trial, such difficulties will soon be overcome, and the result after the second generation prove a hardy race, for many of the Cape kinds may already be considered as half-hardy, bearing, as they do, several degrees of frost without injury.

In sowing the seeds and raising the young plants, the treatment should be in all respects like that of the hardy Rhododendron, and at no time should artificial heat be used to obtain or stimulate growth. Afterwards select, when the proper time shall arrive, the most promising kinds as regards hardihood for recrossing, until a thoroughly hardy race is established, when, as is the case with all mongrel productions, selection and cultivation will do much towards attaining perfection.

The cross-breeder, however, should at all times be guided by a comparison of results obtained from experience, and from such draw conclusions upon which to act, for mistakes are made, and will still be made, in the endeavour after advancement; and much will depend as to the value of what may be raised afterwards by attending to particular objects. In the present case, everything must be sacrificed for hardiness, and the varieties will afterwards be improved by selection and cultivation, like the offspring of all mixed breeds.—GEORGE GORDON, A.L.S.

BUDDING AND GRAFTING WITH A SELECTION OF NEW AND OLD ROSES.

THERE was a proper answer, and a very queer answer in the last Number about budding forced Roses. A gentleman down at Brentwood, where the eastern counties' farming begins to tell after leaving London, wrote to say he had a lot of Manetti Roses, and he wanted to bud on them from some of his forced Roses for two reasons—the first, to gain so much time, or say one season, if he did them now or up to the end of February. The second was a more valid reason—he was a good hand at budding, and could bud them himself; but as to grafting Roses, he had so little practice in it that he felt he was not quite well enough up to the mark of doing it; and the next best plan, of course, was to apply to the fountain head of practical knowledge in such matters. The answer he had was what tickled my fancy, and made me write about Roses to-day. Oh, yes! "Your plan is founded on scientific principle, and your plan and theory are both correct, and must succeed; but, after all that, the practice of the whole trade is against you." Now, that answer must have sprung from one of two very different causes. The gentleman from Brentwood must have begun his letter on the second page, and so put the Editors into their best mood, because they would have no trouble with it; or else they, the Editors, intended to show cause why there should not be more than two modes of proceeding. The common saying is, that there can be but two ways of doing or saying a thing—the right way and the wrong way. But here we have a different version of it. A plan and theory founded on scientific principle must, indeed, succeed unless very badly managed; but "the practice of the whole trade is against it." I always said that the practice of several in the Rose trade was not altogether good; but to say the whole practice of a trade is against a plan and principle on a plain scientific foundation, is just as much as to say there are two good ways of doing a thing against

one bad way of doing the same. And, as is always the case when the Editors have two strings to their bow, they make us writers draw one of them with no more to say than "mind the mark," and on this occasion it so happens that it is my turn to pull; otherwise the Editors, would keep Manetti and Morven as far apart as the poles of the earth so early in the season.

The first turn is, that there are two ways of budding Roses and ten ways of grafting them. The gentleman at Brentwood has hold of the second way, which is the surer of the two. He is about putting, or has already put, his lot of Manetti stocks into the forcing-house, forwarding them to the growth they would have naturally in the middle of May. The bark will soon "run," and so will the gentleman, and never stop until the whole are budded with the best new Roses—such as John Hopper, Beauty of Waltham, Madame de Chabillant, Madame Furtado, and Madame Crapelet, Louis XIV., Senateur Vaisse, General Washington, General Simpson, and Admiral Nelson, Victor Verdier, and Madame Vidot, and such like popular and much-prized kinds out of the newer Roses, together with a very select few of the older kinds, beginning with Madame Laffay, Géant des Batailles, Baronne Prevost, Duchess of Sutherland, Duchess of Norfolk, and down to Général Jacqueminot, which was an oldish Rose the moment Senateur Vaisse hoisted the standard; also a very few sweet-scented Roses, which no one likes to mention in these days on account of Manetti, which such Roses never want to be budded upon. I mean the old Cabbage Rose (the very best of them yet after all), the Crimson and Crested Moss, Boule de Nanteuil, Kean, Paul Ricaut and Paul Perras, Coupe d'Hébé (Her Majesty's favourite Rose), Chénédele, and "Lee's Perpetual," all sweet, sweeter, and sweetest.

Of course, he, the gentleman aforesaid, will bud all these, and some others, as near to the surface of the soil in the pot as he can manage to turn the worsted thread in tying on the buds; worsted being the best tie in the forcing-house, as it will keep moist of itself the whole time, from the moisture or vapour needed in the air in all such forcing. Having full command, now, over his handiwork, he will not allow one joint more to grow on the Manetti parts, but force the whole action of the roots into the one outlet of the new buds; then it is one sees the effect of forcing with 10° or 15° more of heat than out of doors in summer—there would seem to be more huckstering between the Rose stock and the bud, to see which could go first, as it were.

Now, and for two more months, the stock, even the excitable Manetti, will yield to the run of the new bud, on a pressure of from 55° to 60° of night heat, with that degree of moisture. Then, if March be a fine month, by the middle of April every one of the buds will have made shoots from 10 to 20 inches long, according to the sorts, and by that time, no doubt, the pots will be taken to the greenhouse, or at least to a cold pit, and if any bloom-buds come they will be instantly picked off. All this time not a leaf of the Manetti stock must be touched, all, as yet, consisting in merely stopping every effort to make more growth to Manetti; for, recollect, what the Editors say about scientific principle, all this work is based on that, and going at railway speed, to make up one whole season in advance.

Well, cold-frame work till all the bedding plants are out, and, last of all, give the spring-budded Roses their free liberty in the richest-made bed of loam and rotten dung that ever was made in the eastern counties. But, yet, that scientific principle has kept on the head of Manetti, and at the planting-out time the shoots from the budding are to be cut back just one-half their length, the balls entirely shaken off, and some shading will be necessary for the first ten days. The first effort of new growth will be at the top of the pruned shoots, and when the new growth there is three or four joints long will be the time to begin to reduce the head of the Manetti. Up to that moment poor Manetti has been doing the necessary work of that member of the Rose peerage for whom his head is to be cut off, and we shall see no more of him, for in these eastern counties they found the safety of giving burial to all Manettis on the occasion of cutting off the heads; and so it is, and if there is an inch of Manetti not buried, that inch will dispute for pre-eminence with all that are worked on it, and both would be crippled. So there is no need to follow further the fortunes of this batch.

But, how comes it that the trade never bud their forced Roses, or force the new Roses to have buds from? They do both, but they do it very differently, and make every bud produce a plant after all. If the trade were to wait till the bark of the stocks would "run" in order to bud, their customers would

bark ten times louder for the delay than they now do, and every one knows the barking is loud enough as it is. This I can tell to my cost, for I am obliged to buy every inch of Rose I grow, on account of my relation to Manetti, and though I went in for John Hopper as early as the middle of December, I could not obtain it for love or money; but I was lucky enough to procure Beauty of Waltham on its own roots.

All the nurserymen graft the new Roses as fast as they can make them grow the first year, and many, if not most of them, grow all their best Roses from cuttings both the first year and until they have a full stock of them; but the real new Roses are difficult to be had on their own roots the first season, and so I lost my chance of John Hopper for another year.

It happens sometimes that when one is cutting-up a new Rose for grafts there are some very small side shoots which are too slender for grafts; but being as good as so much gold they are struck as cuttings, and are soon as good as the grafted plants, and that was the luck by which I was enabled to procure Beauty of Waltham and some others of the same feather. Well, budding Roses is one of the easiest operations to learn; but grafting them is an easier process and a much safer way to make every bud tell for a plant; so there are two best ways of doing this part of the business.

The best way to bud a Rose in summer or winter is not to extract the bark and bud from the shield of soft sappy wood as some do, but to take the thinnest slice of the sapwood along with the bark and bud; then if the edge of the bark does not take at once, the soft woody slice behind the bud is sure to stick to the soft body of the stock and amalgamate with it for the flow of sap into the new bud, and it is on that same principle that a grafted Rose is more safe than a bud put in on the ordinary plan of budding. Grafting Roses is not like grafting Apples and Pears, it is more of an intermediate process between budding and common grafting; the Rose-grafters, merely take a thicker slice of wood behind the bud than is done in budding—say a thicker and a little longer slice, and one bud only; then the stock needs only a like slice to be cut out of it, and the new bud and slice to be nicely fitted to the part without tongueing or wedging: nothing but to tie on the slice. Supposing you took a slice of bark and wood off a branch, and cut across the bottom to take it out fair, would it not be easy to stick on the same slice again, and tie it round with some soft binding? Of course it would; nothing was ever yet easier to learn in this world.

Rose-grafting is quite as easy, only you take the slice from a different branch, which is all the difference. But clever practitioners do it still easier. They cut off the head of the Rose stock, and leave only a little stump out of the pot; from the top of this stump they slice off about $1\frac{1}{2}$ inch down, and make a cut across the bottom of the slice which leaves a notch there, and on that notch they rest or fit the bottom end of the graft slice, then cut the top end of the slice square with the top of the stock, tie, and clay; sometimes they do not clay at all, but it is more safe for ordinary people to put on a little clay for all kinds of grafts.

The best way to clay a Rose graft and all pot grafts is, to put a lump of clay in a pot saucer and as much water as will make it into a soft paste, like very thick paint, and with a little brush paint the stock and graft all round, then dust it over with sand, which will keep it from cracking, and all is finished. Gardeners make their own brushes for this work, a bit of soft matting tied on the end of a stick like a pen-holder is all they require. When you hear of people grafting Roses in-doors, the plan is still more easy. There is no pot or mould, only so many Rose stocks lifted out of the ground on purpose, and any of the ways of grafting will do. I am going to graft a great many Roses this next month merely for amusement, and to try two or three ways, the one against the other to find out which is the easiest and most sure. Most of my stocks will be six-inch lengths of any Rose roots that I can lay hold of, for, ultimately, I shall induce the grafts to root on their own account. D. BEATON.

PEAS—GREENHOUSES.

I MUST this week ask to be a seeker of information instead of being, as usual, in my small way, a giver of such; although, probably, the result of my questionings may be useful to other folks besides myself. In one of the reviews of the Great Exhibition just closed the reviewer remarked—there must be surely

some great mist over our eyes about diamonds, that fabulous as was their value it was not warranted by their appearance, that to his mind the imitations of the Koh-i-noor in cut glass were quite as brilliant, and that he questioned very much whether if one of them had been placed in lieu of the veritable gem half the crowd that pressed in to see it would have found it out. Of course this was a most heretical declaration, but I only mention it just to shelter behind while I make one as bad—namely, that there is, to my mind, as great an illusion on the subject of Peas. We have a wonderful variety—Peas as large as bullets, and as sweet as if they were sugared; Peas that grow 6 and 7 feet high, and others that only grow one and a half. But I must—turn me out of your company, oh! ye gourmets—express my entire abhorrence of the whole race of Marrows. I do not think there are any Peas that equal those we have in the first part of the season. Daniel O'Rourke, Sangster's No. 1, &c., I can eat and enjoy them; but when they are over, and these great hulking grenadiers come in, my Pea-eating diminishes in an inverse ratio, and I look forward to the coming-in of the French Bean as a positive relief. Now, what I want to know is, and will some one who does not blush for my want of taste inform me, whether it is not possible to have such Peas through the season, and, if so, what would be the conditions under which one might expect to have them? All through the summer at Paris you have the *petit pois*; and, I suppose, our Victorias, Ne Plus Ultras, &c., would be considered as only fit for the strong stomach of John Bull. As one must be now looking out for seeds for the year, I should be really glad of any information on this subject.

Then, again, I want a little advice on the subject of a greenhouse. My present one is all coming to pieces, and I want to put-up a new one in its place. It is a lean-to, and heated by a flue. Of course I want to put it up as cheaply as I can, and for this reason purpose having the top a fixture, no sashes, but simply bars glazed. I have in my mind the size I want, and most of the details; but I should be glad if some friend to small gardeners would say what is the best plan of ventilating. The house will be about 16 feet long and 10 wide, in a corner, so that the wall forms one end of it. It faces about south-west, so that it receives a good proportion of sun. It needs good ventilation, and that is one point I want information on. Then, with regard to glazing, I remember seeing, some two or three years ago, at the nursery of Mr. Wm. Paul a new system, which seemed to me much more economical than the ordinary one. The glass was laid on putty, and screwed into its place with screws on indiarubber bands. Will he kindly give his experience of the matter, and say how it answers, and whether frost affects it or not, and how it is to be done? I dare say such information is to be had, and has been given before; but then every year makes such changes and introduces so many improvements, that it is just possible one might reap the benefit of some more recent experience.—D., Deal.

CROSSING STRAWBERRIES.

I HAD intended, on seeing in my November part of your Journal the question put by Mr. Darwin about crossing Strawberries, to have replied, mentioning an experiment I had made in that way, but having occasion to go to the country for a time, I postponed doing so. It had gone out of my head till after my return, when I was again reminded of it by seeing two answers to Mr. Darwin's letter in the December part of your Journal. These answers do not exactly meet the question, neither does mine precisely, as I am now to give it. But, as the subject is one of high interest and referring to a tribe of plants among which I have been experimenting for many years, any item of information, however small, may not be without its use to some of your other readers, if it should be valueless, as I fear it may, to Mr. Darwin.

Having many years ago received from my friend Dr. Jameson, of Ecuador, seeds of a large-fruited Strawberry, cultivated at Quito as an importation from Chili, I sowed them and raised a very large-berried brood, but with fruit so insipid that I regarded them as utterly worthless. Having at the same time a very fine but intractable kind of Strawberry in my garden, called "Myatt's Pine," which after a time ceased to bear fruit, I be-thought myself of trying to infuse its delicious aroma into its robust congener from Chili; and I was induced to this the more from observing one valuable property in this latter species

—namely, its stout fruitstalk—so I made the cross and have now cultivated the progeny for two or three years. The insipidity of the Chilian parent is removed, and a considerable share of the Pine flavour communicated. The fruit-stems, too, are stronger than in the Pine. Plants are at Mr. Darwin's service if he wish for them. They are a good deal alike, yet there is one of a peculiar habit, very dwarf, and throwing off few or no runners, the fruit of which is globose, not angular, as is the case with most others of the batch.

It may not be uninteresting to Mr. Darwin and your general readers, to mention a result in crossing which I have not heard of being before detected.

In the spring of last year I made several crosses among Rhododendrons with the pollen of *R. Nuttalli*, the largest-flowered and noblest of its race. Observing the unusual size of the seed-pods of this cross, I took measurements to-day of their dimensions, and beg now to note the respective measurements of these pods as borne by *R. Dalhousiae*. The largest pod I can find of *R. Dalhousiae*, not crossed, is $1\frac{1}{2}$ inch long by $1\frac{1}{2}$ in girth.

Of three pods of *R. Dalhousiae* crossed with *R. Nuttalli*, each is $1\frac{1}{2}$ inch long by 2 inches in girth.

One pod of *R. Dalhousiae* crossed with *R. longifolium* (rather a robust species, but not nearly so robust as *R. Nuttalli*), measures $1\frac{1}{2}$ inch long by $1\frac{1}{8}$ in girth.

The seeds of the above crossed with *R. Nuttalli*, one of the pods of which, pulled some days ago and opened to-day, appear to be as abundant as they are large, those of one pod nearly half filling an ordinary-sized teaspoon.

Has this result of enlarged fruit or seed-vessels ensuing from crosses effected by larger species than the seed-bearer, been before observed? With me it is too marked to be a matter of chance. —ISAAC ANDERSON-HENRY, *Hay Lodge, Trinity, Edinburgh.*

[Mr. Anderson-Henry enclosed a leaf of the cross-bred Strawberry. It is very peculiar in form, the leaflets being compressedly-circular, or, as botanists term it, oblate-orbicular. —EDS. J. OF H.]

CELERY CULTURE.

AS I have been more successful than "HUDDERSFIELD," I will detail my mode of growing Celery.

I sow in pans about the middle of March, and place them in a little heat, close to the glass. When ready for pricking-off, I transfer the plants to a frame in which Asparagus has been forced, and in which the heat is almost exhausted. When there for three or four days, I give the bed a slight watering, if required, and then prick-out the plants and water, keep them close for two or three days, and shade if requisite. When they take hold and commence growing I give plenty of air, hardening them by degrees, and ultimately removing the sashes altogether.

Watch for a favourable opportunity to plant out. If the sun should break out shade with some spruce branches. I never allow the plants to receive a check. That I consider is the most essential point in Celery-growing.

For my principal crop I grow from twelve to fourteen hundred, and the man that takes them up for the kitchen tells me that he has not met with half a dozen bolted plants up to this time, and

I an answer for the Celery being as crisp and solid as any one could wish for. It was not so large as it should have been, but that I attribute to the maggot or blotch on the leaf, which was very bad, and equally bad on the five sorts that I grew. I had some quicklime and soot dusted on the leaves, but I was too late in doing it, as the mischief had been done; but it prevented it from becoming any worse.

I plant single rows in a trench, the after-treatment is similar to that of "HUDDERSFIELD'S."

The sorts that I have grown this year are—Cole's Superb Red Solid, Cole's Crystal White, Seymour's Superb White Solid, Bossam's Pink, and Incomparable Dwarf White. The last is, indeed, incomparable, for none of the other sorts can compare with it for crispness and solidness. It is small, but we do not want great clumsy stalks for a gentleman's table. Bossam's Pink comes next to it for quality.—A. S., *Staffordshire.*

I NOTICE in your Journal of this last season many complaints about a failure in the Celery crop. Now, I do not know how it is, except that Ireland possesses a better climate, &c., for growing that favourite vegetable; but this I know, that I never had a better crop, and my man makes no fuss about growing it. The

way he does is as follows:—During the season all the droppings of the cow-house which pass through the grating or gripe are wheeled into the garden, and accumulated there ready to be put in the trenches, when the Celery is about to be planted, in a layer of about 6 inches thick, and mixed a little with the soil.

The seed is sown on a slight hotbed amongst late Cauliflowers about the 1st of March, and after the young plants are well up the lights are taken off, and the plants allowed to spindle-up to about 6 inches. I do not think pricking-out is of much service, as the taller the plants are the sooner they may have their first moulding; and the earlier they are planted and moulded the better Celery is obtained. I make about three mouldings or earthings do. I do not dribble, dribble-up a little now and then, but give a regular good moulding—say of 4 or 5 inches at once. I pull the plants out of the seed-bed without any ball, just keeping what soil remains to the roots, and in this way the man by a glance can see whether any grub or canker worm is on the roots.

I always sow the old kinds, Cole's Crystal White, and Cole's Superb Red, and have no cause to be dissatisfied with them. I have 14 inches of good, clear, solid stalk, 2 inches in circumference, and entirely devoid of stringiness or soft heart. I always choose the stiffest part of the garden for growing Celery in. I do not use either liquid manure or soap-suds, as we here have always plenty of Nature's liquid falling upon the plants.—HIBERNICUS.

DISEASE IN CUCUMBERS.

THE Cucumbers were planted out in pits, heated by hot water, last year, before I came here, and the trellises were nicely covered, the plants looking healthy, moderately strong, and showing abundance of fruit. My predecessor told me how they would go, and well I know it. I could scarcely find one out of fifty from which I could manage to take a piece out that was fit to eat. I have tried a great many sorts, but they all go the same here. They swell till they are about 5 inches long, then they curl up like a ram's horn, and a sort of gum issues from all parts of the fruit. If we let them hang long, they will drop a bit at a time, and smell like a rotten egg. The soil we have used is good fibrous loam, a little decomposed dung, and leaf mould, &c. I keep them neither too wet nor too dry at the roots, and I use the syringe very sparingly overhead, but sprinkle water over the floor and pipes when shutting-up, if open. I generally have the house at 70° by fire heat in the day, and from 60° to 65° by night. I find the Cucumbers just the same in spring and summer on dung-beds. If you know of any preventive I should feel obliged.—A CONSTANT READER.

[Yours is one of those inveterate cases of Cucumber disease which seem to have hitherto baffled all attempts to effect a cure, or suggest a preventive. We have, however, submitted the matter to one of our regular correspondents, who writes us as follows:—

"I am sorry to hear of the Cucumber disease appearing in your correspondent's winter fruit, and I only wish I could with certainty suggest a cure. This, unfortunately, I cannot undertake to do, as I have had no experience of the disease since 1850, when I had it amongst some winter fruit exactly as 'A CONSTANT READER' complains of, and, subsequently, crop after crop of frame fruit became likewise affected, and even those on ridges were similarly attacked, though not so severely, perhaps, as those under glass; but the Cucumber crop of that year might be safely pronounced a failure.

"Of course, the season did not pass over without my trying several experiments, with a view to arrest the evil, but they were so far unsatisfactory that I believe no single plant produced fruit entirely free from disease. Nevertheless, some were more diseased than others, and I was led to the conclusion, that although the disease is a malappropriation of the juices of the plant, which instead of producing fruit, furnished a disgusting-looking glutinous tumour almost at every spine, yet I could not but believe that the disease was also in many respects contagious or infectious; for although I tried plants on soils as widely different from each other as sand from clay, the disease still existed, differing, however, in degree. This and other reasons led me not to attempt Cucumbers in winter the ensuing season, but to try growing them the following spring and summer in a compost the same as that in which they seemed least affected with disease the preceding season. Accordingly

some extreme mixtures were made, in which charcoal dust, mortar rubbish, and other materials entered freely—not all alike by any means, but there were several which at other times I should have considered odd and unsuitable; still the exceptional nature of the case warranted this at the time.

"The result was crops of fruit, not so fine certainly as have been grown on more favourable mixtures, but the fruit was healthy and clean, and my object was attained. This, I may observe, was in 1851, and I do not think we had a diseased fruit until very late in the summer, and am not sure there was any then, and since that time we have been free from the disease.

"I have heard of its visiting other places in a like manner, and I believe it to be more prevalent in winter-grown fruit than in those grown in summer. This is easily to be accounted for: the plant at the latter time is more robust, and capable of so preparing its juices as to feed its legitimate objects; whereas, the energies of the other go to feed an incurable abscess, and whether you grossly feed or half starve the patient, he cannot long survive when the stomach remains so long out of order. Plants like human beings, however, benefit much by inhaling a more suitable atmosphere, and it is possible 'A. CONSTANT READER'S' plants may partially recover when more sunny weather sets in; but my experience leads me to think they will be too far gone then, and the fact of their being affected on dung-beds in summer, both in his case and in my own, leaves little hope of a cure until the growing of Cucumber plants has ceased for a time, so as to allow all traces of that contagion or infection, which I believe has a something to do with the matter, to die away; and a fresh beginning made at a proper time when there is a good chance of success, will most likely result in healthy plants, and clean and wholesome fruit.—J. ROBSON."

COCOA-NUT FIBRE DUST FOR PROPAGATING PLANTS.

THE tide threatens to overflow the tanks already in the matter and manner of applying the cocoa-nut fibre dust over open tanks for propagation. They told me at Kew, last September, ten times more in favour of the stuff that way than I put on record, because I missed the head propagator, and, also, because I intended to go to Kew on purpose for this one object, some time at the height of the propagating season. Meantime, and to stem the tide of inquiries about how the refuse is to be kept out of the tank, let me come, or become, a correspondent, and put a few simple questions to ladies like "A. H.," in a shade of mauve pink paper, and to gentlemen like his reverence down about Salop.

How is it that the coffee "grounds" are kept back, and that tea leaves do not get into breakfast-cups? The way those feats are achieved, or a way like it, ought certainly to keep back this refuse from a tank of water under it, and yet let up the vapour to keep the refuse constantly moist.

Or, how do the brewers down in the country manage to keep the "grains" from going down from the mash-tubs into the cooler? Surely the ingenuity which has accomplished such difficult engineering processes could suggest some simple mode of effecting this; for to tell the truth, I quite forgot to ask the gardeners at Kew how they managed to surmount the difficulty, but I must take a note of it and make a diligent inquiry.

But I can tell how our clergyman, the Rev. Edward Phillips, managed this winter to prevent this refuse from going down in his propagating-pit, and in another hot pit, which may be 30 feet long, and 5 or 6 feet wide, all heated by Mr. Jones's cannon boiler.

The reverend gentleman sent for a load of the cocoa-nut fibre bristles, not the dust of the refuse, paid 10s. for the load on the spot, so it must be worth over three times more money than "our dust," and so it is, for it is found to be better than hair in all stuffing where hair is used, and in all kinds of plaster and mortar, and such-like. Well, 3 inches of this bristly stuff, put over open rubble, is pressed into 1 inch in thickness, which keeps back sand and mould, and lets up hot vapour in abundance.—D. BEATON.

SEA-KALE.

FOR Sea-kale to be in the same bed for ten years as "P. M.'s," and prove profitable in the year 1863, is taking us young men by surprise, who have for their motto "Upwards and Onwards."

Sea-kale, like all other strong-growing vegetables, is very fond of liquid manure at midsummer; but I never before understood that it cared for it at Christmas, nor any other plant wanting foliage. What would Grape-growers say if Mr. Thomson, in his admirable treatise on the Vine, advocated giving liquid manure to the Grape before a leaf was to be seen on the rods? Though the one is a fruit and the other a vegetable, both should have leaves, at least, before a stimulant in the shape of a liquid is brought into use.—H. KNIGHT.

NEW GRAPES ON NEW-YEAR'S DAY.

YOUR correspondent, James Fowler, Harewood Gardens, seems to question my statement doubting Mr. Thomson's being the first to raise new Grapes on New-Year's day, because I did not send any to be inspected before the 10th of February, 1862. Now, for the "why." I might have sent sooner; but, if he will remember, that was the time the question first became discussed in your columns, or in that of your contemporary. "Next," because I never show Grapes or any other fruit in London.

I herewith send you a small bunch of new and old Hamburghs for your opinion, and may state I cut some of both on the 1st of January this year.

I have at the present time hanging—Barbarossa, Lady Downe's, West's St. Peter's, Muscat of Alexandria, and Charlesworth Tokay. I have no word at the present time to say which are the best, but will leave that to abler hands to judge. To show that the idea is not new of having Grapes so early, I may mention that I saw at this place, some few years since, Grapes ripe on the 1st of January, and they had had them some years before then, which statement, should my predecessor see, he can vouch for.—J. E. F., *January 12th.*

[The bunch of new Grapes sent by "J. E. F." was a very fine one, short, and well set; the berries large and as black as sloes. They were not, however, quite ripe, having rather a too-marked acidity about them; still they evidenced on the part of "J. E. F." very high gardening skill. Accompanying the fruit was a leaf which measured 17 inches broad, and 17½ inches from the point to the margin of one of the lower lobes! It was like a rhubarb leaf for size. The bunch of old Hamburghs had decidedly the advantage in flavour; they were considerably shrivelled and had begun to assume the raisin form.—EDS. J. OF H.]

I WAS rather surprised a few weeks back at seeing in your Journal a communication from Mr. Anderson, setting up the case of Mr. Thomson's having new Grapes on the 1st of January as unprecedented. I would have taken no further notice of the matter, only from seeing that there is some doubt still of others having done the same.

I have little doubt there are many cases of the kind in the country, if they were made known. I myself cut some good new ripe Grapes at Christmas, some sixteen or seventeen years ago. I can see no reason why any one who is allowed the means should not have done so for years back. In fact, I consider it much easier to have new Grapes in December than in March. Of course, the Vines require a season or two of preparation.

Your correspondent, Mr. Fowler, need have no doubts about "J. E. F.," of Knowsley Hall, having ripe Grapes on the 1st of January, for it is well known in this neighbourhood that the late gardener at Knowsley, Mr. Jennings, who is well known as one of the best gardeners in the country, had regularly for many years back a large house of new Grapes ready by Christmas, and Grapes of such a quality as would not have disgraced our great London exhibitions in May: therefore, with the means already provided, the present gardener would, with ordinary care, have but little trouble, so far, in following the footsteps of his predecessor.—J. SKENE, *Garswood, near Warrington.*

ESTABLISHING A ROOKERY.

IF "GATLEY" will take the top of an old bee-hive and fix it firmly as high up as it can be placed in one of his Elm trees, I think he may succeed. I did so some years ago and the rooks had young ones in it for two seasons, but they were stolen each time, so that I did not succeed after all. The trees were nearly in the centre of this city.—D., *Lincoln.*

GARDENIA AND POMEGRANATE CULTURE.

THE following hints are in answer to the inquiries of an Irish subscriber, and refer to the two hardier kinds—radicans and florida—the first growing compact as a dwarf bush, and the second rising more upright as a larger shrub; both producing large, double, white, sweet-scented flowers; and both coming to us originally from the flowery land of China.

1. *Propagation*.—Any time during the summer will do; but from the 1st of March to the middle of April I consider the best, as the plants will then be well established before winter. Small shoots, about 2 inches in radicans, and 3 inches in florida, of nearly a season's growth answer well placed in well-drained pots, in sand and covered with a bell-glass. These pots may stand on the surface of a mild hotbed for a fortnight or three weeks, and then be plunged in a bottom heat of 80°. If the bottom heat is from sweet tan, or dung and leaves, no bell-glass will be required, as the vapour from the dung, &c., with a thin shading in bright sunshine, will be quite sufficient to prevent wasting-perspiration from the cuttings. In such a place the cuttings will root quickly, and then should be potted-off and placed back again in the same place, kept close at first, and air given as the roots work freely into the new soil. Then nip out the point of the plant to make it bushy; and if a small 60-pot was first used another shift may be given into a 54 or a 48; keep growing with heat and moisture, and give more air in autumn that the plant may stand cooler in winter. After a second summer's growth the plants will be large enough to bloom in the following spring.

2. *Soil*.—This should be heath mould and loam, and a little sweet leaf mould and silver sand. The heath mould should preponderate in the first shifting, until for middle-sized plants there should be equal portions of each. For large well-established plants fibry loam should take the preponderance; and as soon as the plants are intended to bloom, not only should the drainage be ample, but the potting should be done tight.

3. *Time of Potting*.—For great success this is a matter of importance. Good-sized established plants will do well several years without repotting; but still when convenient it is as well to give the plants fresh soil, if no larger pots are used. The best time to do this is after fresh growth is taking place after pruning. Then pick or shake away a good portion of the old soil, use fresh soil well aired, plunge the plant if possible in a mild hotbed, water with water at 80°, and keep rather close and shaded until roots and tops are growing freely.

4. *Pruning*.—This should be done as soon as the plants are done flowering. The radicans will generally need but little pruning. Frequently young shoots will be growing before the flowers quite fade, and then the cutting-out of old pieces to give these room will be the chief pruning. Florida will need more of the knife to keep it in shape. The object in pruning is to obtain as many shoots all over the plant, as equal in strength as possible, as there is room for, and which will not only be strong enough, but ripe enough before the end of autumn to produce flowers at their points next season.

5. *General Treatment and Position*.—I will suppose that the plants have done flowering in June, and that they are standing in a warm greenhouse. After dressing or pruning, and syringing overhead, the plants may stand a few days, and are then taken to a hotbed. Here they remain on the surface for a few days, and are then, if possible, plunged in a bottom heat of 80°, the place kept rather close, and the plants syringed evening and

morning, and a little shade given in the middle of the day. After pruning some plants may have enough of young shoots, and in their case top-dressing or repotting may shortly be done. In the others, as soon as fresh growth is proceeding repot and encourage this growth, giving more air by degrees as the shoots become pretty equal in strength. The next object is to harden them so as to cause the flower-buds to set. About September air should be given liberally and plenty of sun, and by the middle of the month the pots should be kept free of the plunging materials—in fact, a cold pit would then do as well as a hotbed, and in such a bed with a hot-water pipe, or in a greenhouse, they may stand pretty close all the winter in a temperature averaging 45° at night; and during that time the soil should just be moist not wet. When it is desired to start them into bloom in spring select those first with the plumpest buds, and set them in a hotbed on the surface, where the temperature will range from 50° to 55°. In a fortnight the pots may be plunged in a temperature of 80°; and the top heat may average 60°, with a rise from sunshine. As soon as the flower-buds are nearly expanded raise the pot out of the bed. In a few days move to a drier atmosphere, and then in a few days more the plants may be moved to the greenhouse, in a rather close place, and where the temperature will be from 45° to 50°. Here the bloom will continue

much longer than in a hot pit or stove. After flowering the pruning, potting, &c., must be proceeded with as already detailed. These plants, provided they obtain a growing, a ripening, and a resting period, will do pretty well without a hotbed; but the hotbed treatment is not only the most successful, but does much to keep the plants in a clean and healthy state.

6. *Watering*.—When in bloom the colder the place the less water will be required, and that should be warmer than the house. When resting little water will be required, but the soil must not be dry. When growing freely water will be needed rather plentifully, and manure water then will help much. After sunny days the syringing of the foliage will be relished. In autumn no more water should be given than will do to keep the leaves from suffering.

7. *Insects*.—Green fly is apt to appear on the flower-buds when swelling, and also on the very young shoots, and a little tobacco smoke is the best remedy. Thrips and scale are also apt to assail them, but the hot vapour from fermenting material is the greatest enemy to such depredators as these.

Such a fine variety as *Fortuni* may have exactly the same treatment, but the temperature in winter should not be below 50°; and for such tropical kinds as *Devoniana* and the long-tubed *Stanleyana* it should not be lower in winter than from 55° to 60°. These latter could not be managed well without a stove; the former, to which I have chiefly referred, can be grown in fine order with the assistance of a greenhouse and a hotbed.

PUNICA (Pomegranate).

We are glad you have succeeded so well with this in a pot, though you failed with it against a wall, especially as respects its blooming. Perhaps the plant when against the wall was scarcely old enough to bloom freely. From all I have seen of it, single and double, I consider the Pomegranate to be rather hardier than the Myrtle, and when once established the treatment of both is very much alike. When against a wall the Pomegranate delights in soil light rather than stiff. When in a pot, and especially the double-flowering variety, it delights in soil more stiff and rich. To secure free-flowering, the training and prun-

Specimen *Gardenia Stanleyana*.

ing should be regulated to obtain a great number of slender shoots, as it is from them, and at their points chiefly, that the little bunches of flowers come. All rank shoots should either be removed or shortened. Against walls, therefore, the shoots should be spurred. In fine specimens in pots grown to a single stem, the head must be managed in a similar way to secure abundance of these spray-like shoots. Such specimens in pots, if the pots were mulched, would be safe enough in a shed in winter where little frost could enter, and when from 6 to 9 or more feet in height, they make pretty objects out of doors in summer. The single kinds are easily increased by seeds sown as soon as the fruit is ripe; also, by cuttings and layers, and the double and dwarf kinds by grafting on the single kinds.

R. FISH.

METEOROLOGY OF 1862.

HARROCK HALL, WIGAN, LANCASHIRE.

	Thermometer.			Barometer.			Frost.		Rain.		Prevailing winds.						No. of Days each Month.		
	Maxi- mum.	Mini- mum.	Mean.	Maxi- mum.	Mini- mum.	Mean.	No. of days.	No. of days.	Amount in inches	N.	N.E.	E.	S.E.	S.	W.	N.W.		Total Days.	
January...	46.3	22.0	33.8	29.950	29.250	29.423	13	10	1.34	...	...	11	4	4	3	6	5	2	31
February...	52.0	21.0	36.2	30.300	29.010	29.534	10	6	0.53	2	2	2	8	3	1	3	6	2	28
March...	52.3	19.0	37.7	30.000	28.750	29.322	10	15	2.89	...	...	2	3	3	4	4	6	2	31
April...	71.0	26.0	42.1	30.050	29.051	29.501	4	12	2.42	4	1	5	6	3	4	7	4	2	30
May...	72.0	42.1	51.4	29.541	28.700	29.502	...	18	2.82	4	1	2	3	4	4	7	14	1	31
June...	67.2	46.0	52.6	29.800	28.700	29.493	...	23	3.04	...	...	...	2	2	1	10	12	4	30
July...	68.0	48.0	55.0	29.851	29.000	29.400	...	15	3.52	...	...	...	1	2	1	10	23	2	31
August...	68.2	50.0	51.0	29.851	29.020	29.435	...	12	3.62	...	...	...	1	2	1	10	23	4	31
September...	68.0	42.0	52.1	30.102	29.151	29.752	...	11	5.65	...	...	3	5	4	...	4	17	4	30
October...	62.2	28.0	45.6	30.123	28.200	29.403	...	1	4.48	1	1	6	3	2	...	4	10	3	31
November...	55.0	22.0	38.6	30.050	28.201	29.465	18	1	1.75	2	2	9	3	3	7	8	5	2	30
December...	56.2	30.1	35.61	29.920	28.951	29.541	5	17	3.74	1	1	...	4	4	1	9	1	1	31
Total.....	...	...	...	...	...	...	61	167	35.68	13	23	65	42	23	62	101	36	365	

The highest reading of the thermometer in the shade occurred on the 29th of May, 72° 0; lowest ditto on the 4th of March, 19° 0. The greatest quantity of rain that fell on any one day in the year was on the 4th September, when 2.43 inches fell in the seven hours preceding 11 P.M. of that date; barometer at 29.301 inches; wind, W. The aggregate rainfall of 1862 is below the average of the last five years, and 9.45 inches less than 1861. It fell in small quantities at a time, and extended over a greater number of days than in the year last named. The temperature, especially of the summer months, was likewise considerably below the average. It was this low temperature, and the continued showery weather, that rendered the summer of 1862 so disastrous to gardening.

Kitchen-garden crops of all sorts have either been entire failures or most indifferent in quality. Spring-sown Onions were, in a majority of instances, complete failures. Carrots little else. Peas and Beans ran terribly to straw, the pods (legumes) filling indifferently or not at all. Kidney Beans never grow above 5 or 6 inches high, and never yielded a single dish

Celery I am almost afraid to speak of. It certainly is the worst crop I ever grew. Out of some 900 plants I believe there are 850 of them bolted. The White sorts are worst in this respect; the Red are a little better. I cannot account for it in any other way than by supposing it to be the result of the untoward season, as it was treated the same as in previous years.—
J. DUNN.

ORCHARD-HOUSE FRUIT.

WE received some time ago specimens of the Newtown Pippin Apple and Winter Nelis Pear grown by George Wilson, Esq., of Gishurst Cottage, Weybridge Heath. On former occasions we have had frequent opportunities of speaking of the success of Mr. Wilson as a cultivator of fruits under glass, and now we are enabled to lay before our readers additional proofs of his skill in this branch of horticulture. The specimen of Newtown Pippin measured $13\frac{1}{2}$ inches in diameter, and was of a fine uniform pale yellow colour. Unfortunately it was seized with an attack of that mischievous fungus, so prevalent this season, before we had an opportunity of judging of its flavour; still, from what we saw of the Melon Apple and Northern Spy grown by Mr. Wilson in former years, there is no doubt that the Newtown Pippin would also have been fine. The Winter Nelis Pears were among the finest we have seen, the largest weighing $5\frac{1}{2}$ ozs. They were very handsome, and the flavour was exquisite.

POTTED PEACH AND NECTARINE TREES IN AN ORCHARD-HOUSE.

SUPPOSING Peaches and Nectarines in pots to be three or four years old, to what extent should they be pruned in March? The trees in question have been pinched-back in the last summer three times, according to Mr. Rivers' plan, and the shoots made since August 1st are from 12 to 18 inches long. The writer is aware that a small portion of last year's shoots must be shortened to three or four eyes. His question refers to fruit-bearing branches of the present season.—SUBSCRIBER.

[If the trees have made shoots since they were pinched-in, "from 12 to 18 inches long," these shoots should be shortened to about 9 inches, taking care to prune down to a triple bud, or a single leaf-bud. If there are too many of these shoots, so that the tree is likely to be wounded when the leaves are on them, some of them should be thinned-out with a sharp knife, leaving no spur, but cutting them out close to the branch.]

EFFECT ARISING FROM DRAINAGE.

HAVING lately visited a friend on the edge of the fen country, I heard a most singular and to me unaccountable statement of a supposed fact, unchallenged and evidently believed by all present. It was to this effect.

Many persons living could remember fields in which the peat soil when they were young was 15 or 16 feet in depth, and in which a crowbar planted perpendicularly would soon bury itself; that in ploughing these same lands now, the clay was often brought to the surface, the peat, or bog soil rather, having all disappeared except a few inches, and yet that the surface of these fields was as high relatively to surrounding objects—for instance, canal-banks, lock-gates, roads, and highlands as they are called, upon which the towns and villages were built—as before the disappearance of this large amount of soil.

On my asking how they accounted for this phenomenon, they all agreed the clay subsoil had risen in the same degree that the surface had disappeared, and attributed it to the same cause—drainage. Being equally unable to controvert or explain this statement, I agreed to refer the matter to you for your opinion. Does wet clay increase in bulk when deprived of moisture? I had always thought the contrary, but we wait your decision.—
J. R. PEARSON, *Chilwell.*

[There is a well-known story of Charles II. enjoying the joke of puzzling the Royal Society by asking, "Why a vessel of water weighed no more when a fish was put into it than it did before, though no water escaped from the vessel?" The joke was ended when one of the members said, "Who has proved that it is so?" We, following that member's example, must ask, In any place known to have lost 15 feet of peat, is the surface

of the clay beneath raised 15 feet, so that the soil's surface retains the old level with surrounding objects?

It is quite possible for small depths of bog-earth to disappear in consequence of drainage, and yet the soil beneath to appear as high as before such disappearance, because the banks around the enclosure, if resting on the bog-soil, would sink in proportion as that bog-soil sunk.—EDS. J. OF H.]

PITS, AND THEIR FAILURES.

It is very unpleasant for people of hopeful or sanguine temperament to hear of crosses or failures in matters where they experience or anticipate success. I am not, therefore, surprised to find that my former remarks about small pits should call forth words of disapproval on account of the doleful and discouraging character they bore. Still the facts are as stated, although the deductions might not be the best. It is easy to imagine how the most inappropriate and badly-designed structures might not only be turned to good account, but that results of a more than ordinary character might be produced from them in the masterly hands of Mr. Fish, in the same way that an eminent chemist, in his early days as an experimentalist, produced wonderful results from the use of tobacco-pipes and other crude appliances, that few ordinary men could or would use. I can also understand how a clever amateur may work a small pit to advantage, where another would be unable to make anything of it. And it is to this same cleverness that some little merit should be awarded; for if every one who undertook the management of a pit or greenhouse could manage it to perfection at first starting, where would be the great merit, or where the superiority of one gardener over another? It is just to allow that readers are to a certain extent acquainted with the subject treated on, and, doubtless, most of the readers of THE JOURNAL OF HORTICULTURE are well informed in gardening matters; but then it is possible to allow too much, and as a proof that I have not recounted all the mishaps that have occurred with regard to small pits, and that there are people in the world who do take such matters in hand without proper thought and care, I will relate one or two more instances of failure. One man built a turf-pit of 20 feet by 6 feet, and 4 feet high at back, furnished it with a brick stove and flue, part brick and part pipes. The first winter, having spent 12s. for coke, he did not keep a single plant of 500 Scarlet Geraniums—the stock put into the pit during the autumn. Another built a good, sound brick-pit of eight lights; and finding that it did not answer his expectations, and that he could not perform wonders with it at first starting—like a person buying a fiddle under the impression that with it he is buying an ear for music and a talent for playing—he gave up in disgust all care about it. Another built a pit of wood 6 feet high at back, 18 feet long by 6 feet wide, as near as I could judge from sight. This also was furnished with a brick stove and flue. The man was both ingenious and persevering. He tried many methods of making it profitable and useful, but with only partial success, for of all garden structures these small places require the most constant and watchful care. A change in the weather will sometimes unexpectedly make a fire burn up clear and strong, endangering the lives and health of the plants, and where a man cannot always be on the spot, as is mostly the case where such places are built for recreation, he can scarcely give them the attention required.

I could give other instances, but it would be only a waste of space to do so; I will therefore merely observe that I have myself had the care of a small pit heated with flue-pipes, and made it answer all the purposes for which it was intended, and in a way that would to many be perfectly satisfactory; but not so to me, since, being in the habit of weighing the cost and labour with the results, the latter would lose considerably in comparison with those of a pit properly furnished with hot-water pipes, &c. Nor would the hot-water pit want half the care and watchfulness required by one heated with a flue.

I should never for a moment object to a good-sized greenhouse being furnished with flues, for some of the best plants and best fruit have been grown in houses so heated. Nor would I attempt to discourage any one from trying to do his best in the way of cultivating plants. It is rather for encouragement that I would caution the inexperienced against being misled by the notion, that because a clever and experienced gardener can produce good results from barely adequate means, they have only to become possessed of like appliances to be able to do as

much. If a person's means enable him only to build a pit, why not be content at first with plants that are easily grown? or if he have only a frame, is there less merit in filling it with healthy-looking Intermediate Stocks, or choice Picotees or Pansies, than in giving himself no end of labour in trying to keep tender plants, which at best do him little credit?

In this neighbourhood there has been of late years too much attention given to plants of warmer climates—that is, by the poorer horticulturists; while the equally pretty and useful plants that will, in a great measure, stand the rigour of our climate, and are far more easy to cultivate, are scarcely thought of. This has been the reason why many whose means did not allow of building a greenhouse have substituted a pit, and not finding the result up to their expectations, discourage the attempts of others.

In referring to my former remarks (which probably bear a more melancholy character than I intended), "R. F." says that the mishaps there enumerated were more the result of simple mistakes than of necessity. He was right. When a man builds a pit without any thought or care of what he will be able to do with it, he makes a great mistake. If he burns his plants by over-heating, he makes a mistake. If he builds the flue so that the smoke and gas come through, he makes a mistake. In fact, all failures are the result of mistakes; and it is when a man is able to avoid mistakes that he can successfully cultivate plants. Again, "R. F." says there is no necessity for poking your fingers into the parlour fire on a cold, frosty morning. I for one should be very careful not to approach the fire with my hands, were they very cold, for I have experienced that sensation caused by the sudden reaction in so doing, and do not wish to experience it again; although it is a common occurrence to see people rush to the fire, and almost, if not quite, poke their fingers into it, and many of them have to smart for it afterwards. This is not unlike those who rush too thoughtlessly into pit-building.

Why I mentioned charcoal as a good fuel for heating—a small, pit, is because a very small fire may be kept going with it, and in some places it is comparatively cheap, although here it is very dear; still I may be wrong. But this I do know, that I have kept the frost out of small greenhouses by means of a small cylindrical iron stove in which charcoal was burnt; the stove being placed inside the greenhouse, and so arranged as to burn slowly.

Some years ago the wet got into the roof of a brick-built shed; the rafters rotted, and the roof had to be taken off. At my desire a glass roof was placed on instead. There was no stage put in, but the place was soon filled with Oranges, Camellias, Azaleas, Neriums, and such plants. They have always done well, and grown as if the place suited them exactly, and I have used no means of keeping out frost but a charcoal stove, and this has answered the purpose. Makeshifts are very well where a gardener is always near to look after them; but makeshifts are not exactly suited to those who pursue gardening as a recreation, for they often involve such an amount of labour as destroys every semblance of pleasure, unless labour be regarded as a pleasure.—F. C.

WALKS.

(Continued from page 785.)

WALKS MADE OF BROKEN STONE OR BRICK.—With the exception of walks formed of gravel, and, perhaps, ashes, the above-form the most important materials of which walks, public or private, are made; and the comfort which walks of this kind present is visible in most country turnpike roads, where the pedestrian often prefers the middle of the road in clear weather to the prepared footpath, even when the latter is good. But turnpike metal, as the stones are called, will not easily of themselves form a good footpath without the aid of wheel carriages; therefore, however good they may be in forming the foundation, something else must be used at top less hurtful to tender feet. The same kind of stones may, however, be broken smaller, and in that condition they form a very good surface by rolling, &c. It not unfrequently happens that the inmates of workhouses are employed in breaking stones to the size required, and in such cases they are to be had at a much more reasonable price, than when broken by those earning proper wages. The best stones I ever saw used for this purpose, and which formed about the best walk I ever saw, came from a lead mine, the hard, white-coloured stone containing the ore being crushed by machinery until the particles were not larger than boys' marbles, but, of course,

angular. This refuse stone, being all about one size, formed an excellent surfacing to a walk, the white clean colour adding to its general appearance. I believe similar broken or crushed stone is to be had where mining of other kinds is going on; and where machinery exists for the purpose of crushing such stones it could easily be made to perform the same office to some kind that was well adapted to walk-making. The chippings of a stonemason's yard are also often worked-in; and I have more than once made a tolerably good walk of what might be regarded as little else than rubbish, some of the stones being as large as a man's head, intermingled with mortar siftings, chippings of brick, stone, and fragments of anything else, with a fair proportion of dirt, shavings, and straw. The two last-named articles, however, were, in a great measure, taken out. This heterogeneous mass was wheeled into a walk, the foundation of which was deep enough to receive and bury the largest stones; and, beginning at one end, every time a couple of barrow-loads were tipped against the preceding mass, the large stones were raked to the front, so that nothing was left in the depth of the rakes' teeth but such fine matter as would pass through the teeth. A good rolling, traffic, and heavy rain, consolidated the mass into a very good walk—certainly not equal to the best-made gravel walk, but good and firm. The same mode of proceeding may be applied to other substances as well, nothing making a more compact walk than plenty of mortar rubbish mixed with the other material. The walk alluded to above had a little of this admixture, as well as the other things mentioned. A very good and pretty walk may be formed sometimes of waste soft bricks crushed-up. Such as are unfit for building purposes, and break easily, may be used in this way, as likewise may all old or waste bricks, and, in fact, almost anything of sufficient hardness to hold together; slaty substances, however, not being good. Stone-shatter, and stone of all kinds, may be used for the bottom. Some kinds, however, are better than others, as will be shown hereafter.

WALKS OF GRAVEL.—This is unquestionably the most legitimate and best of all materials, and, being tolerably widely spread, is available in most places. It differs, however, much in quality; and notwithstanding all that has been said in its favour, the best kinds have their faults. The great secret in a good gravel walk is plenty of traffic upon it: certainly not the continual wheeling of barrows all in one place, but a well-spread company of pedestrians—such, for instance, as those who use and consolidate the park walks in London and elsewhere. It is not fair to attribute the smoothness of these thoroughfares entirely to the gravel they are made of, for it is the multitudes which daily pass over them that make them so firm; and it is hopeless to expect the same appearance in a walk which, perhaps, does not number more than twenty pedestrians along it per day; frequent rolling may do much to consolidate it, but it can hardly be expected to compete with the other. There are also different kinds of gravel; the best for ordinary purposes in private places being somewhat porous, and consequently liable to loosen a little in dry weather. This must not be complained of too much, as the opposite kind, which sets almost as hard as cement in summer, is also impervious to rain, and consequently objectionable. A medium kind is of course best. The difference in the two kinds named, consists in the fine substance which intermixes with the stony particles; if this is a sharp sand the gravel is of course porous, and becomes firmest in wet weather. If it is a loamy clay, which very often prevails when the gravel is rounded like eggs and marbles, then it sets very hard in dry weather; but when small portions are broken-up it sets badly again, until the mass is also broken. The loamy substance also sticks to the feet after rain, until, by continued rains, it becomes consolidated between the stones, and the latter stick up like a miniature pavement, the sole of the pedestrian only bearing on the top of the stones, much the same as in the pebble-paved walks previously alluded to. It, however, seldom happens that there is any choice in gravel, circumstances determining beyond a question the kind to be used. The best, therefore, must be made of the kind at hand; if it is too stony, part of the stones may be taken out; if too fine, some of the sand or fine loam may be sifted and removed. The quantity of really good gravel required in making a walk is not so large as might be expected; the bottom and even part of the top may be of an inferior kind, the surface only being good. Every one knows the colour in general estimation, but there are other colours as well. Local circumstances, however, always determine this. A kind of spar gravel I have seen in North

Staffordshire and also in Derbyshire is very good; and perhaps the kind that is the least of all agreeable, especially to the feet, is that found on the seashore. Where this kind is used it ought not to be larger than beans or peas; and the large kind sets badly for carriage roads and similar purposes, although often used for such, there being so little adhesion in the round marble and egg-shaped pebbles which constitute the bulk of seashore stones or gravels.

ASHES OF VARIOUS KINDS FOR WALKS.—There is great diversity in these. A sort of red furnace ash or cinder makes perhaps a better walk than any kind of gravel, worms and weeds both disliking it. Unfortunately, it is not to be had excepting in a few places; but the refuse ash and clinkers of many factory works may be advantageously used for walks, the great advantage being their porosity, and at the same time they often set well, and wear as smooth as the best substance that can be had. The colour may be too sombre for some places, but for secondary walks they are invaluable; and, as before stated, worms seldom meddle with this description of walk. Sometimes the pernicious substances with which such ashes are mixed are distasteful to weeds: thus the ash from soda, copperas, different alkalies, and other chemical substances manufactured in certain places are more or less poisonous to vegetation, though rarely hurtful to the roots of trees or shrubs that may be underneath.

SUBSTANCES USED FOR SURFACING WALKS.—Where the material a walk is mostly composed of is not of an agreeable colour or quality, it is not unusual to give it a top-dressing with something better. In some districts, a fine white spar gravel is to be had by washing and sifting, and in others white shells from the seacoast are used for this purpose; the latter, when resting on a foundation of brown gravel or sand, presenting a sort of creamy grey colour, clean and agreeable-looking after rain, and easy to walk upon. The spar gravel is also equally pretty, and many other substances are likewise used at times, more especially to give colour, in some gardens, to the polychrome features recently become so fashionable, as brickdust or chippings, both buff and red, small coals, and broken-up glass or chinaware. The many substances which may be worked into a walk are so numerous, that it can hardly be expected of any one individual to mention them; but they will readily present themselves to those who notice what is going on around them.—J. ROBSON.

(To be continued.)

THE GOOD-GRACIOUS PANSY.

I BEG space for a short, but not unimportant, remonstrance. In page 26, describing Mr. Beaton's Double Pansy, which seems likely to have a great demand, you give its name as "Good-Gracious," by which you "trust it will become generally known." Indeed, I trust it will not. To some, nay, I hope to very many, of your readers, such an appellation jars painfully upon the moral sense, as something excessively near a transgression of the third commandment of God's holy law. Is not this the appellation of the blessed God? What is the essential difference between saying, "Good gracious!" and "Good God!"? Are not both equally the common invocations heard from the lips of the profane? Let us not be repelled from the love of flowers by profanity.

It does not appear that Mr. Beaton himself has invented this unseemly name; and from what I judge of his character from his writings, I hope he will repudiate it, and protest against it.

Expressing what I am sure will be the thought of hundreds, I will not conceal my responsibility under a pseudonym, but subscribe myself—P. H. GOSSE, *Torquay*.

[We coincide with our correspondent's dislike of the name, and have to explain that when the words "by which appellation we trust it will become generally known" were written, we had received the Pansy under the name of "Princess Alexandra;" and that just as the Journal of last Tuesday was going to press, and after the sheets had passed from our hands, Messrs. Carter and Co. sent requesting that the name might be changed. Messrs. Carter are responsible for the change. Neither the Editors nor Mr. Beaton knew of the alteration until subsequently.—EDS. J. OF H.]

TORTOISES BREEDING IN ENGLAND.

A FEMALE land tortoise was brought from the West Indies and was given to the mother of Mrs. Williams upwards of fifty years ago, it was then about the size of a watch.

It has been in the garden at Tregulow near Scorrier, Cornwall, about thirty-two years.

Four years ago, another was obtained, which turned out to be a male. They were allowed to roam in the garden at their will.

In 1860 some eggs were found, but from insufficient heat they were not hatched.

About the 25th July last, the gardener on passing a south border observed the female tortoise making a pit with her hind legs in a very peculiar manner. On watching her he found she had made a hole some 4 inches deep, quite flat at the bottom. On returning in about five minutes, he found she had deposited six eggs, and was in the act of covering them with earth. He immediately removed them in a flower-pot stand, about 2 inches deep, filled with white sand, to a pine-pit, and placed them on

a tan bed. On the 16th of October following, he observed two of the eggs had been hatched, and on looking around, he found, much to his astonishment, two young live tortoises.

The eggs are about the size and appearance of those of a pigeon.

The young ones are kept in a pine-pit in a wooden box, with some earth and moss, under which they nestle, they are fond of lettuces and strawberries, but do not eat much; they appear quite well and lively, moving about briskly, and are now (January 10th) a little larger than a half-crown.

The eggs were not disturbed while in the pine-pit, the temperature of which, during the time they were there, was from 85° to 90° by day, and from 65° to 70° at night.

The female measures 12 inches long, by 12½ inches wide; the male 8 inches long, by 8½ inches wide, each over the back.

ORNAMENTAL PLANTS.

1. *ROUPELLIA GRATA* (Agreeable Roupellia).—This beautiful stove climber is an evergreen. It belongs to the natural order Apocynaceæ, and to Pentandria Monogynia of the Linnean

system. It is a native of Sierra Leone, and produces in May its white fragrant flowers in cymes at the ends of the side shoots. It is known as the Cream Fruit of tropical Africa.



2. *ESCALLONIA MACRANTHA* (Large-flowered Escallonia).—This handsome hardy evergreen shrub is of a genus which gives a name to the natural order Escalloniaceæ, and it also belongs to Pentandria Monogynia of Linnæus. It is a native of the cold districts of Chili. Its terminal corymbs of purplish-crimson tubular flowers open in June.

3. *DIPLADENIA UROPHYLLA* (Tail-leaved Dipladenia).—A

stove evergreen shrub of the natural order Apocynaceæ, and Pentandria Monogynia of Linnæus. It is a native of the Organ Mountains in Brazil. Its leaves terminate in a long point, whence it obtained its specific name. In June its racemes of flowers open; they are long, funnel-shaped, creamy outside, yellow within, spreading into a five-lobed salmon-coloured limb.

PROTECTION FOR HOTBED FRAMES.

A FEW months ago I saw advertised, "machines for making straw matting," to protect frames, &c. As much has lately been said in *THE JOURNAL OF HORTICULTURE* on this subject, I should be glad to know whether any of your subscribers have tried it. I should say it would answer. My own plan is this—Two Russian mats covered on one side with waterproof calico, and stitched round the edges with twine; these are made the size of the glasses, and a light wooden shutter covers the whole. The shutter keeps all dry—the great point. I find this answers perfectly on a cold pit.—A. R., *Bromley*.

[We have not tried the patent mode. About a year ago Mr. Fish described a homely machine for making strong straw matting; but in wet weather the mats were very heavy to move. We prefer them fastened to frames the size of the sashes. The mode of making them was also described. If the expense of covering them with a waterproofed material was gone to, these straw covers would be very good. We do not see the use of waterproofed calico on the mats, and light wooden covers too. That would be like eating bread, butter, and cheese in slices, all of equal thickness, at the same time. We do not think there is anything equal to wooden shutters, with straw or Russian mats, or any warm material below. A thin, flexible, waterproof covering to keep all dry, would be valuable, especially when hands are scarce, as it takes two to move most kinds of frame-covers.]

ORNAMENTAL FLOWER-STANDS.

So much attention has been devoted to decorative art, that it is by no means surprising to find it prominent in those departments of social economy with which the culture or enjoyment of flowers is more especially connected. Flowers, too, and those of the choicest kinds, of all hues, and of the most delicate perfumes, are in these days brought so far within reach of all who find any enjoyment in the refinements and luxuries of civilised life, that not only in the garden and greenhouse, but in the parlour and boudoir, they become almost necessary ornaments.

The accompanying figures show some of the ways in which art and nature, under the form of vases and flowers may be brought into intimate association in the sphere just alluded to. They are from designs by A. Aglio, Esq., jun., and are intended to be constructed in terra cotta, or zinc, on a large scale, for terrace gardens, halls, and similar situations, where they are to be filled with ornamental plants in the growing state; or they may be made in porcelain, or any fine material, as stands for cut flowers, or smaller plants suitable for in-door-decoration.



The sketch above is of a vase intended chiefly for the table or boudoir, and to be constructed of coloured glass, porcelain, or the finer earthenwares, either plain or with the ornamentation coloured. When filled with cut flowers, these should be arranged amongst fine green moss, kept continually damp, and may or may not be covered by a bell-glass. In addition to the central stand, this vase has the three supporters continued upwards into a kind of cornucopia to hold smaller flowers, and they may be appropriated each to hold a small plant of some elegant Fern. For these purposes, the size may range from 18 inches to 2 feet in diameter. This design may be made of larger size, 3 to 4 feet in diameter, and of zinc or terra cotta, for out-door use, where it may be employed with much appropriateness in detached

terrace gardens, or in situations where vases of summer-flowering plants are required.

The larger design is intended for the double purpose of cultivating a few very choice Ferns in the upright vase, covered by the bell-glass, whilst the stand in which it is placed is to be kept



filled with cut flowers. The supporting figures hold cornucopias which are intended to take some very choice flower, such as a fine Moss Rose, a Camellia, a fine sprig of Fuchsia, &c. The lower stand may, if preferred, be planted with Lycopodiums—*L. denticulatum* being preferable for this purpose. The diameter of the stand may be conveniently from 2½ to 3 feet, and the diameter of the vase 1 foot; the height about 3 feet. It may be made of glass, porcelain, terra cotta, or metal; or the figures alone may be of metal. Colour may be appropriated for the figures and ornamentation.

When vases of this kind are employed for the growth of living plants, the first consideration is proper drainage; there must be no stagnant water. This being the case it would be preferable to use the centre vase for growing plants, and allow this to drain into the lower one, which could be employed for cut flowers. The next point is soil: this should be turfy peat, with plenty of sand intermixed, the mass resting on a thick layer of broken crocks for drainage. Then the plants, if in a living-room, must be constantly covered with a bell-glass; and enough water must be given to keep the soil and atmosphere moist, but not saturated.—(*Gardeners' Magazine of Botany*.)

DISTRESSED WORKINGMEN BOTANISTS OF LANCASHIRE.

THE many kind donations I have received from time to time from your readers has enabled me to cheer many hearts here, and some who were accustomed in times past to take a three or four days trip into Derbyshire, or other parts favourable to Mosses, when the weather permitted, at a Christmas time, have not been denied a part of their usual hunt after Mosses this year, thanks to the liberality of the readers of *THE JOURNAL OF HORTICULTURE*.

There is a slight improvement in trade. Roger Schofield has had from one to two and a half days per week of work for the past four weeks, and John Whitehead has gone on five days per week last Monday; but will have hard work and little pay until a better quality of cotton can be had. Two others have a little more work, but the rest are as they have been for a long time.

I have had to neglect several correspondents this last week or ten days through indisposition, but hope to answer all in a few days. I have received from Miss Baling, 10s. for wet Mosses; from Mrs. Lewis D. Wigan, Rock House, Maidstone, £1 11s. 6d., for Ferns, green and dried; from a Working Gardener, 2s. 6d. (monthly); from William Moulton, Esq., £1, for dried plants; from Lady D. Nevill, £1.—JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.

P.S.—A Mother, from Ipswich, has sent every week since I last noticed it, 2s. 6d. each to Whitehead and R. Schofield.—J. H.

WORK FOR THE WEEK.

KITCHEN GARDEN.

PROCEED with digging, trenching, &c., whenever spare ground occurs and time permits. If some of this ground should require digging a second time previous to cropping, so much the better; it will amply repay the labour. *Broccoli*, a little *Early Cape* sown in a box and placed in heat, will be serviceable for early summer use if there be a deficiency of *Cauliflower*. *Cabbage*, sow a little in a box to be excited by heat, if there is a scarcity of autumn-sown plants. *Atkins' Matchless* is a good sort for the purpose. *Celery*, sow also for early summer use, for soups, &c. It cannot be depended upon as a permanent crop, as it will generally soon run to seed. *Lettuce*, sow in boxes. Give air to those in frames when the weather will permit. *Onions*, sow seed of the Spanish in boxes for planting-out in the spring. *Potatoes*, the *Early Frame* or *Ashleaved Kidney* may be planted in the beds on which *Asparagus* has been forced, or new beds may be made with a large portion of leaves mixed with the dung. Sow *Early Frame Radish* in the same bed, to come off before the *Potatoes* are far advanced in growth. *Tomatoes*, sow some seed immediately, to obtain strong plants fit for turning-out in May.

FLOWER GARDEN.

Where any of the beds in the flower garden require the soil to be renewed, frosty mornings offer an opportunity of doing the work cleanly and expeditiously. Prepare for planting hardy shrubs. If the soil is not suitable for the kinds intended to be planted, replace it with better soil, as much is gained by preparing well at first. Prune hardy climbers during this favourable weather, nailing and tying as you proceed. Relay Box-edgings. Level turf on lawns, adding fresh where it is wanted. Clean walks, turning the gravel where necessary. In March, a thin coat of fresh gravel might be laid on, which would look well during the summer and may be kept clean without much labour.

FRUIT GARDEN.

The late heavy rains have been favourable for newly-planted trees, by washing down the finer particles of soil from the surface among the fibres. In some cases, however, openings may have been formed by the same means, which would prove injurious if not closed-in by working the surface with the spade or hoe; for although the soil may be pressed close to the roots, as it ought to be in planting, yet, in the case of trees with large roots, a settling from heavy rains will cause vacuities near the stem, whilst round the latter an opening is frequently occasioned by the motion of the tree by winds. If water lodge in this it is bad for the tree. Some recommend postponing the pruning of *Peaches* and *Apricots* till late in the spring, or, rather, till the period when severe frosts are not likely to occur; but by late-pruning the force of vegetation is very much diminished. The French only recommend it for trees which are over-luxuriant. When pruning *Gooseberries* and *Currants*, let the centre of the bushes be kept free and open, and cut-out all branches that cross one another, leaving the leading shoots about 9 inches apart, and topping at a bud inclining to the open space. All lateral twigs not required to form branches to be spurred-in to a few eyes. The fruit is borne on short natural spurs, or on clusters of buds formed on the old wood, and also on young shoots, which should be shortened to one-third of their length. Old worn-out branches to be cut-back to a well-placed shoot.

STOVE.

Examine the various tubers and bulbs that are dormant, and see that they are in a proper condition, and not suffering from mouldiness. Do not excite the plants here at present, wait for longer days and more light.

GREENHOUSE AND CONSERVATORY.

The continued damp atmosphere which has prevailed for some time, especially about London, has caused great destruction amongst many softwooded plants. They should be carefully examined individually, and every infected leaf or branch removed. Slight fires to be occasionally applied; but this should be done carefully and judiciously. The injury greenhouse plants may frequently suffer from too much heat, is more than they would suffer from a few degrees of frost when in a dormant state. When regulating the plants, it will be well to wash the foliage of *Oranges*, *Camellias*, and other smooth-leaved plants with a sponge and clean water, and the dust may be removed from *Pelargoniums*, and other woolly-leaved plants, by brushing them lightly with a soft brush. After the plants are cleaned the pots should be washed, and the surface in each replaced with fresh soil, and if the plants require it they should be neatly tied to fresh stakes.

PITS AND FRAMES.

Where there is the advantage of a little fire heat, a sowing of *Ten-week* and *Intermediate Stocks* may be made. If unfavourable weather for out-door work should set in, the most forward of the *Verbenas*, &c., in stock-pots may be potted-off, to be then supplied with a little heat until they make fresh roots.

W. KEANE.

DOINGS OF THE LAST WEEK.

RIGHT or wrong, we are beginning to think that we shall drift behind with all out-door work, from so much and continuous wet with scarcely a ray of sun to cheer us. When fair abovehead there never could be a better winter for turfing lawns and planting fruit, forest, and ornamental trees. In stiff soils digging and trenching have often been out of the question. It is often sound economy to let such ground stand until drier weather, as when turned up so wet it scarcely ever pulverises kindly. On Monday morning, the 12th inst., we had the sharpest frost of the season—and unexpectedly, too, as at eleven the previous night it was quite cloudy and inclined to drizzle, with the wind, however, veering to north and east. Some plants in pits were just slightly touched, as air had been left on some of them; but syringing them with cold water, shutting-up close, and keeping shaded all day, there being sunshine in the forenoon, has now made the plants all right, with no marks of the frost on them. On that morning until mid-day all strength was directed to wheeling dung and rotten leaves on borders and flower-beds at liberty. For the latter purpose at this season, we prefer the beds to be rough-ridged at first, and then the slight manuring spread roughly over them. The exposure to the air and frost sweetens it without abstracting in cold weather much of its nourishing properties, these being washed-in by the rains; and from its sweet and pulverised condition it mixes better with the soil in future turnings as the days lengthen.

On Monday afternoon it commenced raining, and it continued to rain heavily without intermission for about twenty-four hours. It is these sudden changes that make it so important for us to be constantly on the watch, and to regulate our work and doings accordingly. From the force of the wind much wet was driven into our late vinery, and did no good to the late *Grapes*. From what cause we know not, a good deal of putty this winter has got as crumbly as bread-crumbs, and of course can offer no resistance to wet; and the puzzle is that one sash-bar will be thus affected from top to bottom, and the next one to it be as firm and smooth as possible. Sometimes a whole sash will be thus affected, and the sash next to it as sound as need be, and, so far as we know, all were glazed with the same putty, and used in every respect exactly alike. Can any reader throw any light on the subject? Several painters and glaziers confess themselves to be nonplussed.

KITCHEN GARDEN.

Examined vegetables as last week. Prepared materials for hotbeds, for *Carrots*, *Potatoes*, &c. Gave plenty of air to *Potatoes* in pots, *Peas* in pots, &c.; took-up more *Sea-kale* and *Rhubarb*; beat and trampled-down a fresh piece of *Mushroom-bed*; potted *Cucumbers* into small pots in a dung-and-leaf frame; and prepared ground for *Shallots* and *Garlic*, as it is as well to plant before growth commences much. We prefer autumn-planting of the whole; but in stiff soils they do as well in spring, fastening the little bits in drills half an inch deep, and then covering-up with light soil and lime which keep the birds and worms from unsettling them.

FRUIT GARDEN.

Much the same as last week. Put Strawberries on an empty shelf in the Peach-house and back of narrow Vine-pit. Syringed Vines in a sunny day as the 14th.

Looked over *fruit-room* in wet afternoons, and put some Vine-pots into a leaf-bed to bring them on gradually; watered the Vine cuttings in pots. Put a few warm leaves close to the wall of Peach-house to keep the roots there comfortable; and laid a layer of straw neatly along the back of a narrow pit, used for Vines and other early things. This wall is from 4 to 5 feet in height at back above the ground. The straw is placed on neatly about an inch thick, and three strings along fasten it securely. In cold weather the straw covering makes a great difference in the heat. When the outside of the straw was all covered with hoar frost the wall inside of it was as comfortable as a warming-pan. The wall is 9 inches thick, and rather old and worn out. In a hollow wall or near a coalpit such keeping-in of heat need not be resorted to. The last straw covering of the walls lasted three years, and half a load of straw would do more than 200 feet in length of such a wall. For cold pits made of brick it is the neatest and best mode for making them secure in winter. We recollect a pit of nice plants being securely protected as respects the glass, but the frost went through the brick walls and did all the mischief.

Talking of heat brings me in mind of a chance expression we used some time ago as to a return being made in large places to the saddleback boilers, which I see has brought out two correspondents in praise of Mr. Clarke's tubular boiler. Though we have done little with the working of such boilers, yet in describing Mr. Weeks' system of heating we then professed so far our adherence to it. The whole of the rest of these tubular boilers are borrowed or adapted from Mr. Weeks' plan; but if other boilers are well set they will also do their work well, and if not convinced they would do so, they would not adopt them at Trentham, and in such splendid new gardens as those at Welbeck. Give only a dash of zeal and enthusiasm, and a gardener will make a common boiler do wonders. For ourselves, however, on various accounts, we have a hankering after the upright tubular boilers, though we have heard of considerable bracking and flying among them.

ORNAMENTAL DEPARTMENT.

Looked over the plants in conservatory, and gave more water to Camellias swelling their buds, to Cinerarias, &c. All forced plants should go at first to the closest and warmest end. Chinese Azaleas, after the middle of January, need but little heat to start them into bloom. All plants from bottom heat, as Hyacinths, Lily of the Valley, Musk, &c., should be raised out of the plunging material a few days before being moved. All such plants should be as carefully guarded against sudden changes as any pet in the animal world on which we set a high value. Give plenty of air to Heaths and Epacris, and other hardwooded plants; but when the temperature outside is near freezing, give little or no front air to beat on the plants. A few Gardenias may be put in a sweet hotbed, and air given at first. Succession bulbs may also be started. Little is gained by forcing Violets; but a little bottom heat, and plenty of air in suitable weather, will cause them to come finer and stronger. All runners should be removed from the Neapolitans, which are as sweet as any still. For cool houses and entrance halls, the *Aspidistra nudiflorum* would be very showy at this season, especially if grown with a stout stem and a drooping head. The wet and the frost injure the flowers outside, but kept from wet, the plant might look like an umbrella of green and gold. It has no scent, however.

PITS AND FRAMES.

Found that the mice had penetrated into a frame of bedding *Calceolarias*, and nipped-off the tops of one kind entirely—Victory, a small dark sort. Poison and traps must be laid for them. These cuttings were put-in in November after the first frost, and have just rooted too well; not one, we believe, has nipped, and all are quite healthy. We shall not know where to find room for them. But for the frost coming, it would be quite time enough to put-in these cuttings in December, as the sooner they are put-in and the sooner they root, when planted so thickly the sooner do they demand thinning and moving in spring. A few plants were covered all day on the 12th, as they were not protected the previous night. Having made a little room, we have commenced taking-off some hundreds of cuttings of variegated *Alyssum*, variegated *Geraniums*, *Crystal Palace* *Nastur-*

tiums, &c., as at this season, with a little bottom heat, they strike quickly and need no shading. Whilst the sun is so low, we prefer, in a sunny forenoon, giving a slight syringe overhead in preference to shading or watering. Who is to let out the pretty new *Lobelia*?—R. F.

TRADE CATALOGUES RECEIVED.

Sutton & Sons, Reading.—*Spring Catalogue and Amateur's Guide for 1863, Containing Selections of Kitchen-Garden Seeds and Roots, Flower Seeds and Plants, and Agricultural Seeds, together with Cultural Instructions.*

W. Steward & Co., 18, Drake Street, Plymouth.—*Price Current of Garden, Farm, and Flower Seeds.* 1863.

James Lothian, Campbeltown.—*List of Dutch Flower Roots.* Autumn, 1862.

B. S. Williams, Paradise Nursery, Holloway, London.—*Catalogue of Flower, Vegetable, and Agricultural Seeds, Bulbs, and Roots.* 1863.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

CELERY (*County of Durham*).—We do not think that the variety grown had any connection with the "bolting" last autumn. The same occurred very generally, and to every variety. The cause we believe to have been a check to the growth of the young plants, caused by ungenial weather at pricking-out time.

SIZE OF FLOWER-POT (*Country Secretary*).—We know of no rule requiring the diameter of a pot to be measured an inch below the rim. We think it ought to be measured close to the rim. All such measurements are taken inside. An eight-inch pot ought to be 8 inches diameter next to and within the rim, and 8 inches deep perpendicularly from a stick laid across the rim to the bottom of the pot inside. A small fraction of an inch, provided not exceeding an eighth of an inch more, in any such measurements ought not to disqualify.

GARDENER'S RESIDENCE (*W. A. B.*).—There is no doubt that it would be more fitting for the gardener, if married, rather than the married groom, to live in the garden-cottage; but we are quite sure that public journalists have no right to interfere with such arrangements. The gardener must plead his own cause with his mistresses.

WHITE BRAMBLE (*Rubus Biflorus*).—Any of the large London nurserymen who advertise in our columns could supply you with it.

SCARLET GERANIUMS IN POTS (*L. C.*).—There is no particular treatment required now, nor until next May, for Scarlet Geraniums, nothing more than to keep the frost from them and to see they do not want for water, and that they have no more water than will just keep them alive. The pots ought to be more or less dry all the spring, but not so dry as to cause a leaf to flag.

FERNS IN CRINOLINE POTS (*H. B.*).—As far as we can judge, in the absence of actual experience, we should say decidedly that the cocoa-nut refuse dust would be more suitable for Ferns grown in crinoline pots than for those in common pots. Let us say a crinoline pot is another name for a sieve-like pot, or pot-basket of wirework, with meshes of greater or less diameter all over it. Then say, use such pots of double or three times the size of clay pots for Ferns; line them with thin flakes of the surface of peat soil, and cram them as tightly as you can press it with the dust from the cocoa-nut fibre mills, and if the Ferns do not flourish in crinoline pots in that way much better, and at half the expense, of attendance, than they ever did before, we should be very much surprised. We have only just learned that the Ferns at the great International Exhibition, which Ferns were only bought for the purpose at the Kingston Nursery the week before the opening of the Exhibition, were then shaken out of the peat and planted in the pure cocoa-nut fibre dust; and the plants were only watered four times the whole time they were on exhibition, and then only by men who never before watered Ferns and only a very few common plants.

GOLD AND SILVER FERNS (*A Subscriber*).—The chances are against your Gold and Silver Ferns doing any good after having lost their fronds, from bad packing and too much cold, no doubt. 50° is the lowest temperature for them in winter, and 55° to 60° should now be the warmth for your leafless ones, and keep them a little moist at the roots; do not give them up before the middle of May. *Gymnogramma* is their botanical first name, and the different kinds have various second names. This is the worst time to give lists of *Fuchsias* and *Pelargoniums*, as better sorts will be out immediately in the spring catalogues.

HARDY AQUATICS (W. Beard).—We cannot say where you can purchase these; but nurserymen who have not a piece of water generally procure them from some place where they are plentiful. There are usually plenty to be had from most ornamental waters, and we have seen the most of them growing in small rivers and marshy grounds round London. We have no doubt this notice or an advertisement will bring you news of them. To your *Galla palustris*, *Hottonia palustris*, *Butomus umbellatus*, and *Nymphaea alba* we would add the large-flowering gorgeous *Nuphar lutea*, *Stratiotes aloides*, *Menyanthes trifoliata*, and *Aponogeton distachyon*. This last-named had better be planted in pots, sunk near the margin, and in severe winters the pots could be raised and set in a tub of water in a close shed or greenhouse.

CENTAUREA CANDIDISSIMA (A Subscriber).—*Centaurea candidissima* is not better than *Cerastium tomentosum* for some edgings, and it is much better for some others than any other plant in cultivation. All depends upon the plants in the bed to be edged.

LIQUID MANURE FOR VINES (An Amateur).—If your Vines are in-doors, and the roots dry, you may use your water-closet sewage, much diluted and heated to from 80° to 100°, before starting the Vines. If the roots are out of doors, the roots most likely will be wet enough, and water is not likely to be required until the ground becomes dry and warm—say from June to September. We would even then, however, use such material with great care. It is almost sure to be too strong, unless much water is added. We once knew fine Vines completely spoiled by using the liquid strong and in a fresh state.

BONE DUST FOR PELARGONIUMS (New Year).—Give your strong Geraniums no manure water or top-dressing until the flower-buds are formed and forming. Then, instead of watering, you might put a quarter of an ounce on the surface in each pot, and give as much more again in ten days. Mixed with water, you might use about three ounces to four gallons of water, mixing it up the day before. See answers to correspondents last week. We like to vary the stimulus just on the principle that a person will thrive better on beef and mutton alternately than on either continuously.

CAMELLIA FLOWERS IMPERFECTLY OPENING (S. D. G., Ireland).—Your *Camellia Hawkeri*, which both last year and this formed fine large buds, of which a few of the outer petals opened but the centre continued a hard ball and finally fell off, requires the centre of the ball of earth to be wet enough and its drainage perfect. In such dull weather, of which we have had so much, air would be advisable, even though a brisk fire should be made in the morning and allowed to burn out, using none at night unless frosty.

APPLE TREES MOSSY AND BRANCHES DYING (G. C.).—If your trees are not too far gone they may be, to a certain extent, renovated by a slight, not a heavy pruning, and by lime-washing the stems and branches as far as you can, coating them thickly with the lime. On a fine, mild, and slightly damp morning in April let a man with a ladder go round and throw some quicklime all amongst the tops. A great part of this will, of course, come to the ground; but it will do no harm there, and what falls amongst the mossy-covered branches will stick to them, and in a great measure destroy the moss. A damp, calm day is best for this work. Much good will also be done by manuring the ground; and, if it is in tillage, do not by any means dig it deep. If these remedies fail, it would be better to destroy the trees and plant again elsewhere. Cutting-down and severe pruning rarely answer for above three or four years, unless the trees are young and vigorous, in which case they seldom want this, excepting to change the kinds.

VENTILATION OF STOVE AND GREENHOUSE (A Lady).—You will see an article in our next Number on this subject, but we may here say that during the dull months 55° may be regarded as the minimum for a plant-stove, and 38° for a greenhouse. You may, however, give air freely to the latter; but the former will require but little until brighter weather set in. The sand in your stove may be kept damp when plants are growing, but when they are at rest keep it dry. Your further inquiries will be met in the article above alluded to.

PLANTING BELLADONNA LILY (A. S.).—The depth for planting these was stated to be 6 inches in the article you allude to. Mr. Beaton has always said that all bulbs which remain in pots from year to year are more safe if buried as low as the neck of the bulb; and when they are not so potted many of them perish from the damp of our hothouses and open-air climate penetrating between the coats of the bulbs when they are at rest. The treatment of *Eucharis amazonica* has been given in every volume of this Journal for the last seven years. The treatment for 1863 is this: To have it always and in all places under-potted—that is, to have the bulbs in smaller pots than Lily bulbs of the same size; to use nothing this season but the best loam and about one-sixth of the quantity of sand; to give it stove heat from first to last, and, better still, to plunge in a hotbed of 80° bottom heat and 70° of top heat from the middle of February to the end of May; and to keep it as constantly watered as a pot *Pelargonium* every day in the year.

PANCERATIUM MEXICANUM (Idem).—You have given the key to your gay-deceiver bulb. You say this *Pancratiium* is dreadfully subject to thrips. There never was a more direct libel, for there is no plant the thrips dislike worse than a *Pancratiium*. Your bulb from Mexico is not a *Pancratiium* nor a stove bulb at all, and you did not give it one-quarter of the quantity of water it requires in the heat of a *Geranium*-house. Your *Pancratiium* which flowered two months ago was a genuine *Hymenocallis*. Mexico is full of these, and from almost hardy to stove kinds; and the whole of the *Hymenocallides* of the American continent require saucers of water under the pots from May to November, and the saucers to be kept full of water the whole time. From the want of water, and from too much heat probably, the juices of your bulb were made so sweet that even the thrips could not resist the temptation of sucking the leaves. Although the bulb is so much like a *Pancratiium* that no man could tell that it was not a *Pancratiium* while it was in flower, no botanist can tell a *Pancratiium* from a *Hymenocallis* without seeing the seeds. But test your bulb be not so hardy as would seem to be the case, go through with it one more season in water in the stove, but nearer to where air is admitted; and if you see one thrips on it, remove it immediately to a greenhouse.

COCOA-NUT FIBRE DUST (A. H.).—One of the best covers over an open tank to let up vapour, and to keep out the dust of the cocoa-nut fibre, is the bristly refuse of the fibre of the nut, or the refuse of the mat and brush makers laid upon a floor of galvanised iron net.

MAGPIE PANSY (Idem).—Mr. Salter, of the Versailles Nursery, who raised that beautiful flower, is the most likely person about London to have it on sale. Mr. Beaton said in the article you allude to that he shared it with Mr. Salter.

MARIGOLD AT KENSINGTON (Lex).—Marigolds have florets, not petals. That you saw at Kensington has the best name; it is called *Pot Marigold* in all the seed-shops, and is one of the best town flowers we have.

ZINNIA FLOWERS (Idem).—The diameter of double Zinnias, like the diameter of Dahlias and all such flowers, varies very considerably in different varieties; we have seen them from 1 to 3 inches across. All depends upon the variety and on the way the plants are treated.

STOVE WITHOUT FLUE.—“I have always understood that to be in any confined place where coke was burning in a stove or other apparatus, without a flue or pipe to take the smoke and sulphur away, is injurious to the health of those who inhale the fumes of it for any length of time. I should be much obliged by your opinion on the subject.”—JOHN JONES, *Ryde Gardens*.

[Such fumes are very prejudicial to health. A stove without a flue-pipe is quite as bad as a brazier burning charcoal, which has caused so many deaths to those sleeping in a room where one was placed. The fumes cause headache, oppression of the chest, fainting, and palpitation of the heart.—EDS.]

APRICOTS FAILING IN ORCHARD-HOUSE (A Subscriber).—Mr. Rivers' plan of treating the tree as an out-door one is more likely to insure fruit than when it is in-doors; but in that case what is the use of the orchard-house? Apricots have been tried under glass upwards of thirty years ago, and failed then. It is possible that by letting them have almost a superabundance of air they may set better, and possibly they may swell and do well under glass; but we have much doubt of it. As a fruit tree the Apricot is more hardy than most others, and requires a cooler and stiffer soil than the Peach; and if your trees in pots do not furnish fruit this season, we would say plant them out as bushes in the open ground, and report the result. If your situation be a dry one, we fear your trees will not be fruitful against a south wall; or even when they do bear, the fruit will not unlikely ripen and decay on one side before the other side is ripe at all. An east or west aspect is better than the south for the Apricot. We are, however, promised an article on this fruit by one of the contributors to our Journal, which will doubtless contain some useful matter bearing on your case. In the meantime, let your gardener prune and regulate your wall trees in the proper way, and if very cold weather occur at the time they are in blossom, protect them only at night. A close uniform protection of netting, or anything that way, though useful and beneficial to the Peach, is not required by the Apricot, which, with the exception of the Plum, is perhaps the hardiest fruit-blossom we have.—J. R.

OLD HOTBED DUNG (M. H.).—This, and that in the bin you mention, although all exposed for a length of time to the weather, will still be so abounding in fertilising components as to be very useful if applied to your Rose trees.

SUMMER-PRUNING DWARF PYRAMID APPLE TREES (W. J.).—Your trees, which you say were pruned in summer and have since made shoots 10 inches long, have evidently been pruned too soon. It is better not to prune either wall, espalier, or any other trained Apple tree until the young wood begins to harden at the base—say for a couple of joints or so; then there is less fear of its exhausting itself by shooting again. This you should bear in mind another year; but, in the present season, you must prune-off the half-matured shoots that have been made since the summer-pruning, leaving, however, a little at the base if the tree should want enlarging. The top will also want shortening accordingly.

WORN-OUT QUICKSET HEDGE (Alpha).—You are perfectly right in destroying the old worn-out hedge, and replacing the soil it has been growing in for other mould, as no good results from planting the Quick plants in the same soil again. Your mode of planting two rows of Quicksets a little distance apart, and a row of Privet between them, is very good for making a good hedge; but as the Privet grows much faster than the other, we would put in cuttings of this instead of rooted plants, thus enabling the Quickset to have a start at least equal with the Privet. If the two rows of Quicksets were a foot apart, carefully planted on good fresh soil that had either been in tillage or taken from a meadow field, and cuttings of Privet a foot or 15 inches long thrust in between them, say 6 inches apart, you will likely have a good hedge in a short time. We would prefer this to Hornbeam or Beach, which are better adapted for shelter than for turning cattle, retaining their old leaves most part of the winter.

NAMES OF FRUITS (H. B.).—*Apples*.—1, Striped Russet; 2, Lewis's Incomparable; 3, Oxnead Pearmain. The Pear is Vicar of Winkfield.

NAMES OF PLANTS (A Reader).—1, *Coronilla glauca*; 2, *Genista racemosa*; 3, *Erica hiemalis*; 4, *Hardenbergia monophylla*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

DORKINGS.

WE cannot resist the temptation of writing a little on Dorkings. We have often done so before, but it is long since, and the question has re-appeared on the surface. Like many other similar matters, essentials are ignored, and trifles are placed in the front rank. Two points have been greatly and most improperly insisted upon as being of first-rate importance—combs and plumage. Both are ridiculous as essentials. The comb of a Dorking fowl is quite immaterial, and it always was; but so much was said about the rose or double combs that they are now but seldom seen; they were formerly numerous, and were the largest birds. We were more than glad to see Lady Holmesdale show such good rose combs at the Crystal Palace. The most ridiculous attempt was to endeavour to make Dorkings birds of plumage, and it was endeavoured to lay down the rule

that unless the tail and breast were perfectly black the bird was not true. Now, nothing could be more mistaken, and it was decided at the time not only that the points mentioned were not essential, but that they had nothing to do with the purity or otherwise. Yet a correspondent writes, he always thought a prize Dorking should have a black breast; whereas he had seen one with white spots or speckles all over it, and thereon he brings an objection to an award. More recently we hear from a Scotch show that birds of unquestionable merit were disqualified because they were too dark in plumage.

It was to satisfy a longing that could not be legitimately encouraged that Silver-Grey classes were introduced; they were a concession made to those who, like our correspondent, would have Dorkings to be birds of plumage. Here their own ideas were embodied, and Dorkings were judged to colour. Few exhibitors have been satisfied. Nevertheless, the remedy is in their own hands, the points are thoroughly understood, and the black breasts are indispensable; but they are the exception, and even in these special classes numbers of cocks lack them. If other proof were wanting, the statistics of the yards where Dorkings are bred would prove the difficulties attendant on the endeavours to breed them to feather or colour. That which amateurs have successfully tried has been to ally increased size and weight with perfect symmetry. This could never have been one had there been any restrictions of colour. We give our best support and our adhesion to the Silver-Grey classes. Exhibitors send them in sufficient numbers to make separate classes, and they have, therefore, a right to have prizes offered for them; but they will only have done mischief if the amateurs of them endeavour to disturb the rules that have guided our best judges in making their awards in the general classes for many years. Such would be the effect of listening to the complaints that appear in the mild form of thoughts—"I always thought," &c.; "but I find," &c.—and such is the result of awards for colour that discourage many old and good exhibitors. We have no hesitation in repeating, that which we have often before said, and which the institution in many places of the Silver-Grey classes justifies us in repeating, if possible with more confidence, that Dorkings are not birds of colour; that provided they are large and square, have five good claws on each foot, are alike combed throughout the pen, and present no arising disparity of colour; that whether or no the cock has white on his breast or tail, or the hens are a shade darker or a shade lighter, they have all the requisites for successful competition so far as colour and comb are concerned.

SILVER-GREY DORKINGS DEFENDED.

HAVING read the article in your Number of the 9th of December, suggesting doubts as the impolicy of continuing separate classes for Silver-Grey and Coloured Dorkings, as a breeder of Silver-Grey Dorking fowls for almost twenty years I confess I should regret if this suggestion were acted upon.

The Silver-Grey, if properly bred, will never become grey on the breast. It is quite true that where they are thrown out indiscriminate breeding, as is not infrequent, no dependance can be placed upon them; and it is more than probable on the second moult that coloured feathers may and will appear both on the breast, back, and wings. Many such birds are shown in the Silver class as chickens that never can again compete in the same class. This arises from want of sufficient care in the selection of stock birds for crosses. It may be that a bird may have himself all the characteristics of purity of blood, but may probably be an offshoot from an indiscriminate yard.

The Silver-Grey, in my judgment, ought to be a counterpart of the Silver-Duckwing Game. The comb should be large and well defined, deeply and distinctly serrated, not projecting unduly to the beak, and perfectly upright; with breast and tail straw-coloured or whitish; back and hackle with certain well-defined markings on the wings. The hens should be pure silver-grey, free from brown on the wings as may be; the breast salmon colour, not, as is too frequently the case in winning pens, one or sometimes both nearer approaching a brownish-white; the fifth claw separate and distinct, well defined, of sufficient size, and well formed. Any pens not coming up to a defined standard ought to be disqualified if exhibited in this class. If properly bred they will never become, however old, grey on the breast, as I can testify from long experience, for I have hens free, four, and five years old that are as pure and true in their

markings as they were when chickens, and so similar that unless marked the different strains could not be known.

All breeders of Dorkings ought to be obliged to "E. C." for the able article in your Number of the 9th of December relative to the Dorking class at Birmingham, and if his suggestions were carried out as they ought to be, and defined characteristics attended to by the judges, exhibitors would be more careful in their selection of the birds composing a pen. A well-defined fifth claw, so important a feature in a first-class Dorking, seems to be, to a great extent, disregarded, and short, imperfect, and in fact connected or ill-defined claws, seem to be by no means uncommon.

In the Silver-Grey class at Manchester, in Class I, the prizes were awarded to pens having several glaring imperfections. The combs of the cocks were both imperfect. The hens in neither of the pens matched, a hen in one pen having speckled feathers in the breast; in the other pen one hen had a salmon breast, the other a brownish white. One of the rules of most of the great shows is that condition and brilliancy of plumage and well-defined markings, not mere weight, should be the standard for approval. Weight ought certainly not to be disregarded in a Silver Dorking, though it should not be the primary consideration.

Fond as I am of breeding the Dorking I would not accept the best pen of Coloured birds, as all interest with me would cease, mere weight being apparently the only desideratum. The Silver bird, when pure, is in my eye a comely and handsome bird, requiring some judgment to breed; his Coloured namesake is generally a large, shapeless, and fluffy-feathered creature, having nothing but size, produced in many instances by crossing with Cochins, Brahma Pootra, &c.—a step no Silver-Grey breeder dare venture to try.

The numerical preponderance in favour of the Coloured bird at exhibitions arises from the fact that breeders of the Silver birds, from want of care in selecting stock birds for crosses, find themselves at sea, and in despair of righting themselves fall back upon the Coloured birds.

It is quite true that the Silver bird is fast approaching the Coloured even in weight; still they are as distinct in their main features as any of the Game classes, and I venture to hope as a breeder, but only a casual competitor, that the time may be long distant when your suggestion will be carried into effect. I know very many who hold the same opinion.

If this suggestion is worth anything, it goes to undermine the classification of Game fowls; there being as much difference between the Silver and Coloured Dorking as there is between the Black, Brown, or Duckwing Game.

I have endeavoured to show from my own experience that, as regards your remarks in reply to "A BREEDER OF SILVER-GREYS" in yours of the 6th inst., the fowls on which your conclusions were based were not Silver birds proper, but offshoots from indiscriminate breeding.—ANOTHER BREEDER OF SILVER-GREYS.

CORK POULTRY SHOW.

THE poultry exhibited were of various degrees of merit. The *Spanish* were particularly good, Miss Drevar and Mr. Hodder taking prizes with birds that would be regarded as first-class in any show in England. Thirty pens of *Dorkings* were exhibited, and, as was the case last season, were very good. *Cochins*, as a whole, were poor; but Mr. Perry's prize Buff and Mr. Zurhorst's White were remarkable exceptions to this general rule. The *Game* classes showed a great lack of knowledge of this beautiful variety. Duckwing cocks were matched to Black Red hens and *vice versa*, the birds exhibited were destitute of anything like style or beauty, being short-necked, loose-feathered animals that no Game-breeder would endure in his runs. From this sweeping denunciation one or two pens must be exempted. Mr. Perry won in old birds with a good active-looking Black Red that won as a stag last year. But most of the other winners were as lumpy and loose-feathered as Dorkings, and some very nearly as heavy. The Gold and Silver-spangled *Polish* were not so strong as last year, owing to the absence of the birds of Mr. Palmer Williams; but the Gold and Silver winners were well-crested and well-marked pens. Miss Drevar swept the White-crested Black class with better birds than are generally seen at any except the very largest shows. The pen of *Silky Bantams* belonging to Mrs. Hodder were as good as any we have seen lately, the black comb and wattles being well developed, and free from any tinge of redness.

In the "Any other" class, Mr. Perry won first with as good a pen of Crève Coeurs as we have seen for some time.

Turkeys were very good.

Geese were of various kinds, many pens of Chinese being shown; and under the name of Danubian, there were many pens precisely similar to those loose-feathered birds that Mr. Harvey D. Bayly has shown under the name of Sebastopol.

Ducks were large and good.

The *Pigeons* were truly a magnificent show. The class of Black Carriers was of extraordinary merit. The Powters were very good; Mr. Hawkins, of Belfast, brought the birds with which he won at Glasgow last week, and carried off many of the prizes, being closely pressed by Dr. Harvey, who was also very successful. The Short-faced Almonds and Kites were numerous, but not equal to the Powters in merit. Twenty-five pens of Fantails made a feature in the show-room. The winning birds were very good, particularly the Blues and Blacks; Jacobins poor; but Barbs very good, particularly those of Mr. Perrott, Miss Pike, and a cock of Mr. Dowling's. The Sweepstakes for the best young Carrier was won by Mr. Goulding with a splendid young Dun, the bird of Dr. Harvey being of almost equal merit. An "Extra prize," given for the best young Powder and Short-faced Tumbler, was won by Mr. Hawkins with a Blue Powder and Almond cock. The White hen, exhibited by Dr. Harvey for this prize was one of the best birds we have ever seen, very long in the limb and feather; but her chance was damaged by the Kite with which she was associated.

The birds were exhibited in the Halifax pens, and were managed in an admirable manner. No show in the kingdom is conducted with more spirit and energy than the Cork Exhibition: consequently it yearly increases in the number of entries, and in the interest it excites, as testified by the number of visitors.

We understand that many additional prizes and medals will be given at the next annual Exhibition.

We published the list of prizetakers last week.

MR. HUTTON VERSUS MR. MUNN.

HAVING read with astonishment Mr. Munn's attempt to drag me into the disgraceful mess into which he has got himself, by imposing upon the Birmingham Committee and the exhibitors in the Black Bantam class at that Show, I feel myself more than ever called upon to defend myself from his attacks upon my character, and to show to your readers that he is now trying to impose upon them also.

It is, no doubt, very convenient to have a "man," behind whom to shield himself when caught in any kind of irregularities. Mr. Munn says that he left home "in the middle of November"—we will call it the 14th or 15th, and bind him down to that time; also, that I "sent two birds on approval," which is correct. He says he was away from home on their arrival. If so, why did his "man" use the following words in his letter of advice to me when they were returned?—"Mr. Munn desires me to say that he does not see the value of £2 in either of the birds."

Then, again, as the enclosed note from the Great Northern Railway Company's office here states, the birds were sent off to him on the 5th November, and returned on the 7th of that month; so that the whole transaction was completed seven clear days before the admitted "middle of the month," when Mr. Munn says he left home. Query, Where was Mr. Munn in the interim? But, supposing he had been from home, the birds would not be sent to the Birmingham Show till the 28th, which leaves twenty-one days for his "man" to apply elsewhere or have Mr. Munn's advice in the matter; and still Mr. Munn does not scruple to tell us that his "man" "had not time to write to and get an answer from" him. Then he says "they were perfectly valueless for exhibition;" but, in the advice referred to, he says nothing at all about the quality of the birds, but contents himself with grumbling at the price.

The one, he says, had red ear-lobes, had pure black legs, was an excellent bird, had already taken first prizes at Skipton and Settle, and I bought him because of the size and whiteness of his ear-lobes; and the other has good blue legs yet, and, if desirable, shall be sent to your office for your inspection.

He says further, that he "knew nothing at all of the affair;" but, on turning over two leaves of your Journal, he says that he "claimed a pen of Geese" at Birmingham. Of course he would be at Birmingham. How, then, are we to reconcile his assertion with that fact?

When his "man" wrote to me he used the following words only, "The one we have has white legs," and never informed me that he had been claimed from me at the Crystal Palace Show: therefore I cannot see what explanation he could expect from me.

There is an old adage that "one tale is good till another is told;" therefore I shall feel it very hard towards myself if you object to retract what you have said respecting Mr. Munn's letter, exculpating him; and if he has returned the prize money to the Birmingham Committee, he has not nor is it in his power to restore the rightful honours to the exhibitors whom he has wronged.

As to the change in the natural colour of the legs of fowls, my experience as an extensive breeder and dealer tells me the contrary of your assertion. I have seen Black Polands, Bantams, and Hamburgs at the age of sixteen or seventeen weeks, with legs within a shade of black, as were the legs of the bird referred to, change to be almost white by the time they were six or seven months old. I have no doubt but that many of your readers can bear me out in this.

In a previous letter I made an assertion which you seem to doubt; but, fortunately for myself, I have invariably acted on the maxim that "two heads are better than one," and have sought advice from other exhibitors before sending a fresh pen of birds to any particular show. In the case in hand I had them examined by two whose names have appeared in prize lists in your Journal; and having washed the legs of the birds before they were sent off, they will give their signatures to the effect that they were naturally a good dark colour, and perfect in that respect, if you will allow them to do so.—E. HUTTON.

[We have omitted much from Mr. Hutton's letter, but have inserted all that is at all applicable to the subject. Mr. Munn says that he knew nothing about the Bantam's legs being blackened, and even Mr. Hutton's assumptions—and they are only assumptions—are not irreconcilable with Mr. Munn's statement. The man when rejecting and returning the Bantam cocks might say, without any criminal deviation from the truth, that Mr. Munn desired him to say what he did say, because Mr. Munn had left him to exercise his own judgment. That Mr. Munn has returned the prize money to the Birmingham Committee we know, because we have seen the Secretary's acknowledgment of its receipt. Mr. Hutton may have seen chickens' legs become lighter as they became adult; but we think he will not venture to say he has seen the black legs of an adult fowl become white as it became when three weeks older.]

May we not take the most charitable view of the conduct of both parties, and accept as truth Mr. Munn's declaration that he knew nothing of the legs being blackened, and Mr. Hutton's declaration that no colouring was put on the cock's legs sent to the Crystal Palace? There have been many instances of birds on their way from a show being changed.—Eds. J. of H.]

PHILOPERISTERON SOCIETY'S ANNUAL SHOW.

THE annual Show of the Philoperisteron Society was held in the Freemason's Hall on Thursday the 15th. The show of birds was truly magnificent in character, and in spite of some varieties not being represented, must be pronounced as one of the best that the Society has ever held. The room was almost inconveniently crowded during the afternoon. Among the company present were many well-known fanciers. In addition to the members we noticed Messrs. Bellamy, Pyne, Dean, Wolstenholme, &c., and a good sprinkling of those savants who take an interest in the variation and origin of species—Mr. Smith, the President of the Entomological Society; Mr. Wallace, the celebrated ornithologist, to whom we are indebted for the living Birds of Paradise; Dr. Günther, of the British Museum, the highest authority on the natural history of fishes; the Secretaries of the Acclimatisation Society, and many others.

Of the birds it is difficult to speak. Mr. P. Eden's *Powters* worthily occupied the pens hitherto filled by those of Mr. Bult; those of Mr. Hayne were also present at the other end of the room. In *Carriers* the Show was particularly strong. Mr. Hayne is a host in himself, and was rivalled by many of the country members. Mr. Oliver's birds were splendid in eye and style. Some of the celebrated Plymouth strain from Mr. Chalkers put in an appearance. Good birds were also shown by Messrs. Dale and Everett, and an exquisite White hen by Mr. Esquilant. *Short-faced Tumblers* were in full force. A Society which in-

cludes the names of Messrs. Lucy, Esquilant, Percivall, Archer, and others, cannot fail in these varieties. A more beautiful pen of White *Fantails* were never seen than those sent by the President, Mr. Harrison Weir, and his *Turbits* were equal in merit. Mr. Wicking's pens of *Swallows* and *Priests* were almost dazzling from their purity of colour. The *Barbs* of Mr. Eden were superb. Amongst them we noticed more particularly two Yellow cocks and one Black that for breadth of skull, shortness of beak, and size of eye we have rarely if ever seen surpassed. *Jacobins* were not in strong force as to numbers, though the quality of those exhibited was good. Among the more miscellaneous birds we may notice a singular single specimen exhibited by Mr. Archer. This bird, which came from Belgium, conjoins the colour of an Archangel with the head of an Owl or Barb, its most striking peculiarity being the extraordinary length of the tail and flight feathers, the latter crossed beyond the tail giving the animal the appearance of a gigantic Swift (*Cypselus*), or Longwinged Hawk. Mr. Esquilant exhibited a pair of very good Blue *Dragons*, and Mr. Tegetmeier a pen of Belgian *Homeing Birds*—the *Smeries* of the continent, but which are usually termed *Antwerps* in England. This pen included some young birds bred from those of M. Simonis, that won the sweepstakes in the long flight from Marseilles to Liège, nearly six hundred miles; from M. Fumel; M. Lejeune, the editor of "Le Pigeon," a Belgian journal devoted to the flying fancy; M. Rutk, and others.

Taken as a whole it was regarded as the best Show that has ever been held by the members of this Society, and as more than sustaining its ancient prestige.

The increase of the number of the members and the zeal with which they bring from great distances large numbers of birds to this annual *réunion*, proves the inherent vitality of the Society, which goes on steadily and surely progressing year after year; every succeeding Exhibition showing more birds, more pens, more members, and more visitors.

HYBRID GAME AND POULTRY.

FROM the ready answers I have seen about crossing Pheasants, I am induced to mention two crosses I have lately observed—one between the Grouse and Black Game, the other between the Guinea Fowl and the common hen. Both were so plain as to be indisputable, having characteristics of both birds. I cannot avoid remarking on the pleasure that may be derived by the interchange of knowledge and remark in natural history.—H. R.

COMMON PHEASANT CROSSING WITH THE SILVER.

SOME correspondents of your Journal expressing a doubt that crosses between the common and Silver Pheasant have never occurred, I beg to say that cases of their having done so are common enough; but excepting for the novelty of now and then shooting a sort of a piebald one, there is nothing to admire in the breed so brought about. On the contrary, I have heard gamekeepers affirm that the cross spoiled the breed, the offspring being tender and sometimes mistaken for domestic fowls, and deficient of that bold bearing which characterises the Pheasant cock of the wild breed. The half-bred differ considerably in appearance, and some may be regarded pretty, but generally they present that mongrel sort of character which is only endurable to those who have never studied the beauties of distinct breeds.—J. R.

BROWN, WHITE, AND PIED CROSSED PHEASANTS.

TWENTY years ago I had more time to spare than now, and took great delight in having Game birds in every variety as tame as could be. Breeding freely, I found no difficulty in rearing hybrids—that is, crosses between White and Brown Pheasants, Grouse cock and Bantam hen, Partridges and Bantams. I often heard of, but never saw, a cross between a Pheasant and common hen, having frequently tried and, of course, failed. Common sense and reason prove it impossible, for the Pheasant takes four weeks to hatch, the common fowl three weeks; and although reading your invaluable Journal for many years, I never saw this remark at any time.

The Pheasants must be pinioned and really tame—that is, feed from the hand and allow themselves to be handled: a run in a garden indispensable. They should be a White cock and Brown hen, or Brown cock and White hen; they must be together the whole season, or hatched together; and the hens must be of one kind. The birds produced are beautifully marked, partaking of both kinds.

I have had Snipe, Woodcock, and Plover living in my garden for a length of time, until cats and other vermin destroyed them. The plan I adopted to procure Game when a boy was to watch the hen, find her nest, change the eggs by putting Bantams' eggs instead, and the chicks, when hatched, would be as wild as their foster-mother. The wild eggs, Pheasant or Partridge, were brought near home to a secure place in a hedge, where a Bantam would take charge and bring them home when a week or fortnight old; then they are easily domesticated.—W. W., Dublin.

CROSS-BRED PHEASANTS.

I AM very glad to see the interest evinced in your last Number about the cross between the common and Silver Pheasant. It is extremely rare, but has been met with. I have never seen one. I have seen fourteen or fifteen between the common and the Golden. The late Lords Beauchamp and Hastings bred them. I am disposed to believe "S." is mistaken. The Pied Pheasant is bred between a common and a White bird. I have bred many, and have one now in my possession. The common, White, Pied, Chinese Versicolor, and Bohemian may all be intermixed, and the produce remain a Pheasant; but if either be mixed with the Golden or the Silver, the produce is a hybrid. The cross between the fowl and ordinary Pheasant is a hybrid. I have had many.—Y.

THE MOVEABLE HEN-HOUSE.

It would be a great improvement if it were possible to fatten to a convenient degree all fowls intended for the market before delivering them over to their fate; for, although the art of so raising and feeding certain breeds has been greatly advanced in some countries, they are usually handed to the merchant in very poor condition. They are often allowed to become too old; and except some chickens fed for special tables, nearly all pass without preparation from the courtyard to the kitchen.

The reason is that the farmer who breeds and raises them has scarcely ever time to fatten them. There must be a great difference between quietly allowing poultry to go and come freely about a farm, and occupying one's self with it as a special branch of the establishment.

I do not enter into such details as to decide, for example, what sort of fowls ought to be chosen. Some breeds which lay well do not produce such good chickens as others which are less famous in the first respect. It is for the intelligent breeder who understands his business to choose the sort of bird most suitable for his purpose.

In France, the towns of Le Mans and La Flèche, in the western districts, are celebrated for the fattened poultry with which they supply Paris.

I do not now tell you of the many methods of fattening adopted by professional poultry-feeders, nor even among other modes of a very ingenious machine, with which a man is able, through the help of a wheel moved by his foot, to fill the stomach of a fowl which he holds in one hand, while with the other he ascertains the vacuity or fulness of its crop.

These processes can only be employed by persons who devote themselves not merely to the breeding of fowls, but solely to the fattening of birds which they procure in poor condition from the farmers.

I wish to write of a system suitable to a strictly farming establishment, and which serves the two purposes of raising poultry economically, and of keeping down in the fields the swarms of grubs which devour their produce.

Birds of all kinds are the sworn enemies of the insect tribe. It is their special mission to restrain the natural multiplication of these creatures within such limits that man shall not suffer by their ravages. But, generally speaking, birds that destroy insects are of no use to man in the way of sustenance. Thus, then, if in place of leaving the insects to the crows and such other birds, we could have them eaten by hens and other

domestic fowls, would there not evidently be a double benefit in such arrangement? It is for the solution of this problem that M. Giot has invented his moveable hen-house.

The interior of the hen-house resembles that of ordinary fixed hen-houses. Its size differs according to the quantity of poultry which you may desire to put in it, and it is mounted upon wheels like a carriage, in order that you may shift it about more easily. It is moved by manual labour, or with the help of a horse, according to its size or the condition of the soil which it traverses. It is desirable to have it furnished with a door, which can be closed at night in districts where there is reason to dread the ravages of vermin. If there are thieves in the neighbourhood, it may be necessary to place a watch-dog in charge of the "colony."

The results of this system are numerous. Chief of these is the destruction of insects to the advantage of edible fowls, the more complete destruction of insects, and the preservation of the fowls in much better health than in enclosed courts.

For persons who desire to try this system, the following mode of procedure may be recommended:—About the middle of March, if the weather is favourable, the moveable hen-house may be placed in the field. Its inhabitants should receive one-fifth part of their food in corn, this being necessary to correct the effects of the course of worms and grubs to which they are at first apt to devote themselves too exclusively. During harvest and in autumn they have no need of such additional diet, at least in ordinary cases, but they may occasionally require water. At the end of October the spring regimen should be returned to, and on the first approach of frost the hen-house must be sent back to the farm.

During the ploughing season it is necessary to follow day after day the course of the plough, in order to destroy with certainty the larvæ turned up by that operation. After harrowing, it is profitable to do the same thing, in order to allow the fowls to pick up the grains which they find on the surface.

Several objections have been made to this system, but experience appears to have refuted them. Some farmers had expressed a fear of seeing their poultry wander; they know now that there is no danger of that. At the end of some days the birds know perfectly their own house in all its travels. Others maintained that hens, from their scratching propensities, would do more harm than good in the sown lands, where it was recommended to place them after the harrows. It is true the hen scratches, but it can scarcely be said that she is invariably a scratching animal. Thus in a court, often very small, where her eye cannot discover food necessary for the satisfaction of her hunger, she naturally scrapes up the soil; but allowed to go freely in open fields, she soon loses that habit. It is sufficient, then, in order to insure the safety of the fields of sown grain, that the fowls should not be permitted to remain too long on the same spots; for the habit which they have of digging-up the soil and half burying themselves there, for the promotion of their digestion, can do no harm to the crops if they are moved sufficiently often to prevent them burrowing repeatedly in the same place.

It is even observable that in the stations of the hen-house the crops are superior, owing, without doubt, to the better mixture of land with the manure and feathers which these animals leave there.

In respect to sown fields, M. Giot reports to the effect that he had tried such a structure as is here described, and that he was surprised to find that the hens had carefully picked up all the grubs that made their appearance one morning after rain, along with all the grains of corn that had been left uncovered by the operation of the harrow, but that they never once attempted to scratch up those which had been properly deposited in the seed-bed.—(*Scottish Farmer*.)

THE WREN FAMILY.

UNDER this heading I wish to include all those English warblers that remain with us through the winter. They are the Golden and Fire-crested Wrens, the Common, Jenny, or Puggy Wren, the Stone Chat, the Dartford Warbler, the Robin Red-breast, and the common Hedge Sparrow, known by a variety of sobriquets, as Molly, Dunnock, Shuffewing, Hedge Accentor, or Fauvette d'Hiver. These are all soft-billed or insect-feeding birds that remain in this country through the whole of the year. Some frequent the woods and heaths, while others prefer the

gardens and cultivated lands. Flying from tree to tree, or creeping along the hedges, they are continually hunting for their daily food, eating an immense quantity of insects in all stages of the development, from the egg to the perfect insect. Thus they greatly contribute to check the rapid increase of these devastators, and, consequently, confer an immense amount of good on mankind. Nor is there one of the whole family that can be accused of doing injury, on which account they should be strictly preserved and protected.

There is no fear of their becoming too numerous. Their food being always insects, they suffer severely in winter; and great numbers perish from cold and starvation in frosty weather. When the earth and bushes are covered with snow, or all things bound hard by king Frost, these poor little famishing birds become very tame, and, driven by hunger, approach the houses, pick up any crumbs or such food as they can eat to sustain life, till better times arrive, at which season numbers fall a prey to boys and cats, or die from cold and exhaustion. Under such circumstances it is pleasing to see the children instructed to collect the crumbs and scattered fragments to give to the poor birds—it speaks of a kindly feeling, and an appreciation of the sufferings of the brute creation. But this reflection is foreign to my present paper, and I must dismiss the subject for the moment, a sordid one of profit and loss. It is with respect to the *pros and cons*—concerning the good or injury rendered by birds to the gardener and agriculturist—that I have penned these articles to endeavour to undeceive those that practise poisoning at indiscriminate destruction of these little creatures, each of which has a good office to perform, and, as far as I am able, point out the benefit each may confer; nor do I omit to mention those cases which are known to me, where any of them commit an injury, or give an annoyance.

In the present instance I am not aware of any one of the above-named birds doing any damage whatever, though it has been stated by some that the Robin does sometimes eat a few currants. On the other hand, they all feed on insects whenever they can procure them, and when these fail them they must die. This, then, being the case, any person having a garden, plantation, or land, must, unless blinded by prejudice, regard them as profitable tenants, and for his own sake desire to preserve them through the winter, that they may be able to assist in keeping down the rapid increase of insects in warmer weather. It is, therefore, evidently to the occupier's personal interest to protect the Wren family, and even offer them food in winter, that he may insure their more efficient service in summer.

Although I urge my petition more particularly in favour of this class of birds, still there are many others equally deserving even among those that it is impossible to deny do some injury or cause some annoyance; and I believe that the majority do greater amount of good than ill.

Some persons think and argue, that since the destruction of Hawks and birds of prey has been so general, that small birds have become too numerous; but I consider such reasoning being somewhat erroneous, for I believe the Hawk's mission, and indeed, that of most carnivorous animals, is to destroy the aged, the maimed, and the diseased, and thus keep the stock healthy.

That Hawks when sharp set, will chase and kill healthy birds, I do not deny. Many persons, no doubt, have witnessed this fact; but very few Hawks will give themselves the trouble at fatigue of a long flight, when food is to be procured on easy terms, for a small bird naturally flies for protection to a hedge or bush, where it can easily baffle its pursuer. I do not think old birds in possession of health are often destroyed by Hawks certainly not so frequently as these theorists would desire us to believe; though young birds may often contribute to the Hawk's bill of fare, yet, I suspect he would prefer the young chicken, Partridge, which could not escape by flight, or lead him to uncertain chase.

In my opinion, it is the abundance or scarcity of food that will regulate the number of birds. When any colony of birds has so reduced the insects on which they prey in one district that living becomes difficult, they must die-off or migrate to other localities. It is the struggle for life that will ever hold its balance in Nature.—B. P. BRENT.

PRODUCTION OF WAX.—Prof. Leuckart has recently expressed the opinion that for the production of wax, pollen is of rather more significance than honey; the latter or its equivalent is of course always indispensable, and the former may at times for

of space be dispensed with; but for the rapid and abundant production of wax, both are required, and the Professor thinks that pollen is much more extensively used in the process than is generally supposed.—(*Prairie Farmer*.)

Prof. Leuckart is a distinguished physiologist, but is not a bee-keeper. If he really has expressed the opinion ascribed to him, (of which, however, I have seen no notice in the *German Journal*), I should most respectfully venture to differ from him.—A DEVONSHIRE BEE-KEEPER.]

DESERTION OF HIVES AND ITS CAUSES.

THIS is notoriously both a dull and a gay season. In the outer world of nature—in mountain, field, and garden, all is desolation, gloom, and silence. Everything without—earth, ocean, and sky—all participate in the same dismal aspect. The sun, shrouded in a sombre livery, sheds his feeble rays obliquely through the dense vapours that surround the horizon, while Boreas sweeps in a withering blast o'er hill and dale.

"All bleak and dismal look the naked woods,
The fields are strip of all their gay attire,
Peal with loud noise the cataract's heaving floods,
Nature herself seems almost to expire!"

Yes! It is only in the social intercourse of friends—in the drawing-room of fashion, or around the domestic hearths of many happy homes of "merry England" that we must look for this season for much of pleasure or amusement; in short, it is only in the communities of men, and not in the communities of bees, that we are to expect any signs of social activity or joyous manifestations of life.

At such a time as this, amid the warm greetings and hilarities of a festive season, the apiarian is apt to forget his numerous ills in the cold silent garden; or, if his footsteps chance to stray, as mine are apt to do from habit, to the apiary-site, he can only give utterance in measured plaint to the first words of a celebrated poem "How still and peaceful is the"—little bee!

A short time ago I looked into the garden of an apiarian friend, who expressed a desire that I should see his stock. The weather was comparatively mild—the thermometer standing at 52°

and we found the bees partially astir, availing themselves of the privilege, so seldom afforded at this season of the year, in our northern climate and in a large town locality, of exercising their bodily functions. Side by side in the apiary stood the yellow-banded Italian and the old English. Few bees appeared of the former; but an adjacent stock of the latter showed a considerable muster. At the first glance a curious phenomenon presented itself to my notice. A considerable moiety of those coming from the English stock were Italians; and having directed my friend's attention to this fact, he at once branded the signers as the most arrant thieves imaginable, and insinuated that, in imitation of their lords, but after a different fashion, they were no doubt interchanging the civilities of the season by buying wholesale from their neighbours' repositories. "Not so," replied; "those are not the motions or habitudes of robbers." They must have deserted from your Italian stock, furnished with the English, and are now become completely domesticated. "Impossible!" "Well, let us see." We examined the interior forthwith, and found it was even so. Of those exposed to our view, twenty per cent were of the Italian race! To this little incident the following remarks on "Desertion and Its Causes" owe their origin:—

On the subject of desertion I will be as brief as possible, and I rapidly run over a few cases which have come under my own observation, and cursorily allude to some of those chronicled by others.

Desertion of bees from their own hives may arise from various causes, some very trivial in themselves, and others of more importance. Some cases are quite easily understood, while others are more obscure and less definable in their origin and character. I shall refer to each of these, though not perhaps in the order they are stated.

The simplest forms of desertion are such as occur in the newly-hived swarm, when, if by some casualty it loses its queen, the whole bees will, as a matter of course, return in a body to the parent hive. The next form of desertion may be illustrated in the case of a hive being found in early spring minus its queen. The desertion in this case is frequently slow and gradual, and the outward evidence which even the most observant apiarian sometimes has of the fact, will be the noticing for a con-

siderable time afterwards, farina-laden bees enter the queenless hive, speedily come out again, re-enter perhaps several times, then fly away, and finally go into some neighbouring hive to which they have before allied themselves. No doubt, in a case of this kind some bees may perish abroad, and some in vainly endeavouring to gain admission to an unfriendly neighbour; but others are evidently more fortunate. I need scarcely remark to the experienced apiarian, that when such strange vagaries are exhibited by the bees of any hives, they may be considered as bad omens regarding the state and condition of that hive. I will afterwards show that in the case of queenless hives in autumn the same results will not follow like causes.

Another curious form of desertion, partial in its character, occurred some years ago with myself. In my apiary stood in summer a stock teeming with a superabundant population. The bees hung in masses around and about the hive; but they were unprepared to swarm, and therefore during the heat of the day they felt uncomfortably oppressed and restive. At noon I removed this hive for some contemplated experiment; but changing my purpose, I again replaced it on its old stance. It had only been removed for a few minutes when the bees, returning from the fields, found their way into a neighbouring hive, which they entered with a loud humming noise. When I replaced the hive on its stance there was no great disposition manifested by these wanderers to return again. The consequence was, that a perfect rush from the dense clusters hanging around the returned hive took place which I in vain endeavoured to quell; and nearly the whole outlying bees, attracted by the hummings of their associates in the adjacent hive, deserted into it, and permanently allied themselves to its unresisting population. The stock which received this unlooked-for accession of bees was thereafter converted from a comparatively weak colony to one of extraordinary industry and vigour. This form of desertion, though partial and altogether peculiar in itself, arose from a cause purely incidental. Nevertheless, I am the more desirous to notice it because I have reason to believe that in numberless instances partial desertions of a limited character constantly occur in a large apiary without the knowledge of the bee-cultivator, and without producing any perceptible benefit or injury in the hives in which they take place.

And here I may observe how much the apiarian of the present day is aided in this, as in all his other researches, into the many curious phenomena which constantly present themselves in the study of the bee, by the introduction into this country, through the instrumentality of Mr. Woodbury, of the yellow-banded Italian. It is but very recently that I became possessed of a stock of this beautiful race; but I expect to be greatly assisted through this agency in the future in investigating, in a new form some of the more abstruse and scientific points pertaining to the natural history of the bee, some of which are embraced in the German Dzierzon theory of parthenogenesis. I have no wish to speak unfairly or disparagingly of this theory; but, believing as I do that there is a great principle involved in it which, however plausibly argued by its votaries, and borne out by experiments apparently carefully and scientifically performed, yet, coming as it does into jarring collision with all which we have hitherto been accustomed to hold as essential to animal reproduction, it is right that the evidences brought forward in support of it should be carefully weighed, tested, and tried in every possible way ere it be allowed to assume a definite position in nature. No loophole should be left unexplored so as to admit of doubt, and every objection (and there are several which might be urged) should be satisfactorily disposed of, which can be fairly shown to militate against the conclusions deduced, which in some instances appear to me to be rather assumed than proved. This, however, is all by the way—a little desertion from the subject on hand, to which I must again return.

Well, a short time ago I noticed a solitary Italian bee in one of my common stocks apparently completely domesticated and fraternised. I happened to be interfering with the stock in some way, when forth came a few bees very furious and greatly incensed at the disturbance. Foremost among these defenders appeared a yellow-striped Italian come forth to resent the insult. "Ho! ho! my little friend, what are you doing here? Domesticated? Let me see." I took it on the point of my finger a considerable way off to try. There—gone! Where has it flown? To the Italian stock? No, but to its affiliated hive from whence I took it, where it was received with all friendliness.

Desertions in autumn, I may remark, are somewhat different from those which occur in spring. A stock of bees in spring

which, through some casualty has lost its queen and been unable to supply itself with a new one, will not continue to work beyond a certain period—namely, after the brood are all hatched; but it is otherwise with a hive so situated in autumn. After the usual manifestations consequent upon the loss of a queen, or their inability to supply themselves with a new one, the bees are sobered-down, through dire necessity apparently, to a kind of settled content, which has often surprised me; and more surprised still have I been by the fact, that when so left in this condition for a considerable time, I have in vain supplied the bees with materials from which they might supply themselves with a new sovereign. The eggs and young larvae they diligently tended and nourished, but too frequently have I been disappointed in their success in rearing for themselves a queen. It would be foreign to my present purpose to enter into a speculation as to the reason of this. I simply desire now to record the fact, at the same time remarking, to prevent an erroneous solution which might occur to some, that any such curious phenomena as “fertile workers” were present to affect their usual instinct in such circumstances. I have had such hives which continued to work on till late in the season, when ultimately they either became the objects of pillage, or the bees suddenly dispersed themselves and disappeared altogether. I must also observe that queenless hives can never be industrious hives, and I have never found them to add much to their honey-stores.

There are other kinds of desertion, which occur both in the spring and autumn, of a different character from any yet mentioned—namely, a desertion by the bees *en masse* from the hive in the form of a swarm, and which are usually ascribed to internal enemies—such as the ravages of the waxmoth, mice, &c., or to destitution and want. I should be ashamed myself to have had any personal experience of such strange occurrences in my apiary, from causes, implying as they do, if this theory be correct, the grossest carelessness and neglect; but, if I am to give credence to information derived from other sources, cases of desertion have occurred where none of those causes stated seem to have been present to affect the bees. As an illustration of this class of desertions, I shall merely chronicle two cases which I myself made the subject of special investigation. One occurred towards the end of March, the other about the middle of December. In answer to my inquiries as to the first case, I was informed that the hive was a second swarm of the previous year, and was apparently in a thriving condition, when, on a mild day towards the latter end of March, the bees left in a body like a swarm, and gathered on a gooseberry bush. The hive from which they issued was examined and found to be utterly deserted, but containing plenty of honey in the combs, and no assignable cause was exhibited for such a strange occurrence. In the evening, the swarm was put into the same hive and removed to its old stance again, and some food administered, but, when the hive was examined two days after, the bees were all found dead. The other case occurred about the middle of December. The hive was described to me as a vagrant swarm, found in June of the same year; and as evidence of its prosperous condition, the gross weight of the hive at the close of the season was given at 52 lbs. About the beginning of December this hive was removed from its summer site, which was stated to be an exposed one, to a warmer locality a little distance off in the same garden. The bees were observed to be frequently out after this removal, but all seemed to take to the new site well enough. On the 20th December, which was described as a beautiful day, a little before noon, the whole of the bees rushed out of the hive and clustered on a hedge a little way off from the place they formerly occupied. Some were brought back to the hive and some followed, but a cluster still remained on the hedge till evening, when the branch upon which they gathered was cut down and laid beside their hive; but the bees did not enter till morning. The weather being fine, they afterwards showed themselves reeling about, but nothing occurred to indicate anything wrong in their condition. The hive was described as having plenty of honey and a good supply of bees. To these particulars I add no comment.

I have not exhausted the subject of desertions in these remarks. There are other causes which give rise to desertion besides those already stated, upon which I cannot here dwell, such as internal damp or excessive moisture, noxious smells, old musty combs, a superannuated or diseased queen. All these may produce a gradual desertion—a dwindling away of the bees until utter ruin overtake the hive; but in these and similar instances of the decay and mortality of hives, there are other causes at work,

and which are superinduced by these internal evils which hasten the final result. Under such circumstances the queen becomes affected by the general epidemic, her breeding powers are paralysed, desertion and mortality gradually proceed, while there is no compensating ratio of increase. The results are such as might, *a priori*, be predicated in the circumstances—the speedy decay and extinction of the whole hive.

I would simply, in conclusion, remark, that there are other curious phenomena which periodically occur in every large apiary, not certainly having any necessary connection with the subject of this article, though giving rise to a very strange phase of it, and with respect to which the queen is a prominent cause. In investigating the singular phenomena to which I can only here allude, I have bestowed considerable attention and thought; and though I cannot say that I have been yet able to unravel entirely the true solution, yet if ever induced to take up my pen to endeavour to cut this gordian knot, to unriddle this physical mystery, I should describe the subject of my essay to be, “A New Chapter on the Natural History of the Bee.”—J. LOWE.

APIARIAN MISCELLANY.

(Continued from page 776.)

Or the hives in the Exhibition, taking them in the order as already noticed in your pages, I next arrive at the curious affair sent by J. Neilson, of Denmark, a very good representation of which is to be seen at page 688. I cannot discover a single advantage likely to be gained by using such a *multum in parvo* bee-shed; while the disadvantages are so obvious they need hardly be particularised. Imagine, however, eight populous colonies congregated within this contracted space; imagine, also, the door opened exposing to the light the interior of four colonies at once; having removed the glass side, proceed to manipulate on one of these, depriving it of a brood or honey comb, searching for a queen or royal cells; and imagine if you can the scene of tumult, fighting, and slaughter which would be likely to follow the desperate venture. My first impression on seeing this compound structure in the Exhibition was that it was only fit for firewood, and, used as intended by the manufacturer, I am of the same opinion still. The neatness of the outer covering of straw was, however, well worthy of remark, and by knocking out all the interior work the case would make a very nice house for one or, at most, two separate depriving-hives.

I did not observe in the Exhibition the apparatus for marking the foundations of combs on bars by forming an impression on a thin coating of wax by means of an engraved roller; but having had an opportunity of inspecting one which “A DEVONSHIRE BEE-KEEPER” constructed for the purpose, I am enabled to speak favourably of the invention, and believe it to be well adapted to the end in view.

The machines in the Austrian department for making straw or rush hives struck me as being very admirable, and worthy of imitation by our own hive-makers. By means of these machines hives of a square or oblong form adapted to the use of the moveable bars and frames can be easily made of greater thickness and stability than by the usual system of straw-hive makers in this country. Of the form of the Austrian straw hive I cannot speak so highly. Manipulation at the ends instead of at the tops of the hives is decidedly objectionable. The drawing of one of them at page 798 is admirable, and gives a correct idea of its squareness of outer form and general solidity.

I have no doubt there were other hives to be found in the Exhibition, but this includes the sum of those of which I took notes at the time. To “UPWARDS AND ONWARDS” we are much indebted for his elaborate survey of the numerous specimens of honey and wax, and their various preparations, the inspection of which must have consumed no small amount of valuable time.—S. BEVAN FOX, *Exeter*.

MACHINE FOR MAKING STRAW BEE-HIVES.

WILL the writer of the article in your impression of 30th December last, tell me how the leverage for pressing-down the straw is obtained? I suppose by inserting the moveable handle into something—but what? And what purpose does the tall upright serve, which is seen rising from behind the others in the engraving? There appear to be horizontal as well as perpendicular rows of stitches; are both put in before the piece is

removed from the machine? and what material is used to stitch with? I should very much like to apply the process with some modifications, perhaps, to the manufacture of straw "Woodbury" hives for my own use.—JOHN P. EDWARDS.

[The tall upright in the engraving to which you refer, is an iron bar 1 inch wide by three-eighths of an inch thick, firmly secured to the work-bench by means of a screw and nut, and perforated throughout its entire length with holes 2 inches apart. This forms the fulcrum of the lever which is hinged to it by means of a moveable iron pin, which is shifted upwards from hole to hole as the breadth of straw increases. The rows of stitches run only in one direction, being perpendicular in the machine, and horizontal in the hive. The perpendicular lines are perhaps rather too strongly marked in the engraving of the latter, as they merely indicate the successive layers of straw by which the hive is formed. The fabric must be properly stitched with what material you please, before it is removed from the machine. Most of the hives of this department were stitched with bramble-splits, but one or two were neatly sown with (we believe) iron wire. Now the rust from this would quickly damage the straw where it comes in contact with it, but this objection does not apply to copper, and copper bell-wire would be just the material. Woodbury-hives made in this manner, with a wooden frame an inch thick at the top and bottom, would be most excellent.]

WHINS, FURZE, OR GORSE FOR COWS.

I HAVE received a letter on this subject, and gave the plainest and the best directions I could; but both for their sake and my own, I would much prefer that any who wish for information on the subject would provide themselves with my little book, which contains so much more information on furze culture and management, and testimonials to its utility, than could be given in many letters. The price is but 8d. per single copy, or 6d. each where four are taken, besides book postage; to be had at Hartland's, Patrick Street; McKensie's, seedsman, Camden Quay; or at the printer's, Messrs. Landon, Bridge Street, Cork.

Every day I have more reason to be convinced and confirmed in my opinion that where furze is cultivated as directed in the book, it is the most valuable seed which can be sown, producing in perpetuity a greater weight of better food than treble the same extent of best meadow. My crop this year is 14 stone the statute perch, equal to 14 tons per acre. One perch sufficient for four largest cows per twenty-four hours. Sufficient seed sown in good ground in spring 1861, and this from long experience certain to improve in quantity and quality, the prickles so short and soft that (cut very short) the cattle eat it, as readily and easily as they do clover or such kinds, and those fed on it are in best condition; the expense of preparing a trifle; with pony power, that quantity is easily cut in a quarter of an hour by the £7 cutter.—(WILLIAM R. TOWNSEND, Rector of Aghadda, Middleton, in *Irish Farmer's Gazette*.)

[We recommend this to the attention of those who keep a cow on a limited space. That furze is relished by cows, horses, and other animals, and that they thrive upon it has long been known. The cavalry horses in Spain during the Wellington campaigns were never in better condition than when their forage was furze chopped small. This is no modern discovery, for Evelyn, Duhamel, Hunter, Martyn, and others record how team horses and other domestic animals thrive upon it. In the Highland Society's, and the Royal Agricultural Society's "Transactions" are many testimonials from practical men to its bullock and sheep-fattening properties, as well as to its nourishing powers as a horse food.—Eds. J. OF H.]

THE POISON OF THE STINGS OF WASPS AND BEES A "PERFECT CURE!"

HEarken unto me all you who are the victims of divers maladies; for may it not be in my power to impart unto you the knowledge that a "perfect cure" lies near at hand, to be found no farther off than in your own or your neighbours' gardens?

Oh! ye horticulturists who are afflicted with rheumatism, let us in future hear no more of your painful experiences; and all who are seized with bronchitis, or troubled with lachrymal fistula, and some other diseases of the eye, send not for your

usual doctor, but take the remedy in your own hands if you have the courage to do so.

It is simple. Let it be supposed that rheumatism attacks your right arm. Sally out, capture the first bee or wasp you can see, and straightway compel it to sting you in the afflicted member. Should the disease fly to your leg, treat that in the same manner. If bronchitis be your assailant, meet its attack, not by applying a blister to the throat, but by substituting the sting of a wasp; or, if disease of the eye be your painful portion, fly to the same inexpensive remedial agent—the poison of the stings of wasps or bees. The curative insect may well say in the words of the ancient general, slightly altered, "I came, you saw, I conquered."

Oh! shade of Sydeserff! may there not have been some truth in thy theory that the poison of a second sting counteracted the effects of the first, and that fifty stings were better than one?

In "Chambers' Journal" for December 27th, in the article on "The Month," we find a notice of the foregoing discovery. Dr. Desmarts and M. de Gasparin are the promulgators of the theory. "Dr. Humboldt, nephew of the late illustrious German, in his practice at Havana, has ascertained that the poison of the scorpion tribe is a remedy for yellow fever. He inoculated 2478 men of the military and naval garrison; 676 afterwards caught the fever, of whom not more than sixteen died."

Then with regard to rheumatism. M. de Gasparin writes, "He had long been afflicted with a rheumatism which kept him constantly infirm. One day, in picking up a handful of weeds in his garden, he was stung by a wasp on the wrist. The arm swelled, but the rheumatic pain disappeared. Seeing this result, he caused himself to be stung the next day, along the seat of pain in his leg, and was again delivered from suffering and able to walk with ease. This happened three years ago, and every subsequent reappearance of the malady has been cured by similar means; and by a wasp-sting in his neck, an attack of bronchitis was overcome."

I do not express an opinion on the value of this so-called discovery, but merely quote the assertions of these distinguished foreigners as given in the veracious columns of "Chambers' Journal."—S. BEVAN FOX, *Exeter*.

SALT FOR PIGS.

WHETHER right or wrong in my idea that salt is injurious to pigs, I am glad the subject has been mentioned. Truth is likely to be elicited by the discussion, and truth alone is my object. Feeling convinced my pigs were killed by salt, I do not feel disposed to set the subject at rest by trying its effects again; as, to say the least, it is not necessary to the well-doing of these animals that they should be fed on salted food. A friend of mine living near Peterborough tells me his servant once poured down some brine in which pork had been salted in his farmyard. There were a number of small bits of meat and fat in the brine. These scraps were picked up by the fowls and pigs, and one pig and several fowls died. I cannot think it possible these bits of flesh were in a state of decay; and if they were, would not expect fatal results to fowls, remembering how I have seen poultry pecking at carrion in a game-keeper's yard. In my own case the potatoes were undoubtedly diseased, but as they were boiled one would hardly expect them to be poisonous; besides which, I have given large quantities of diseased potatoes to pigs before and since with no ill effects. If salt was not the cause of my loss, it is at least singular that my second loss should have occurred the day after brine had been put in the swill-tub. One of your correspondents says he has seen pigs made very ill from eating salt. It would be interesting to know how old these animals were. Mine were in each case rather young store pigs. Supposing salt injurious, the power to withstand its effects may depend on the age and strength of the animal and the amount of the salt eaten. Has any one seen a pig eat salt alone when placed in its way, as sheep, deer, and oxen will do? If so, I shall believe salt beneficial. I hope some one who can afford the experiment will salt his pig before its death and report the result.—J. R. PEARSON.

IS SALT INJURIOUS TO PIGS?

To this question I should say, No; and permit me to give my reasons for making such reply.

In the first year of the potato disease (1845), I had a rather

large piece of ground planted with the variety called Birmingham Blues. I prided myself on their appearance, and had almost begun to calculate the money they would return when consumed, and in the shape of bacon. Delusive grasp! In a few days afterwards their tops were black with disease, and reeking in everybody's nose. I had never heard of the disease, and I believe they were the first in the neighbourhood to be attacked, I being more forward with them than my neighbours. The affair was so sudden, and the taking them up so sudden as well, that before the disease was mooted in the papers the Potatoes were boiled and salted to suit my own palate, and then well rammed-down in the hog-tubs; the putrid ones buried in a rippled grave by the side of the river, and the diseased haulm burnt upon the ground.

I little thought to what an extent the disease was about to spread. I knew, though, that the tubers could not increase in health or bulk by remaining in the soil after the foliage had been destroyed by so sudden a check of nature.

I lived near Ludlow then; and on the 2nd of June—I am not quite sure if it was a Knighton fair day—two of the most Cruikshankish gawky-looking pigs imaginable were bought there from the Welsh hills, for I knew it would never do to buy sleek well-bred fellows from the lowlands to fatten on the food that I should give them for some weeks to come. When they were driven home over some fourteen miles of ground they were as fresh as larks; and our neighbours' jokes flew thick as leaves in Vallambrosa on my devoted head. Jones, our parish clerk, declared he thought I had "bought a couple of greyhounds to fatten!" Well, they had their laugh, and I saw no earthly reason why they should not; and the result proved as follows:—

EXPENDITURE.	£	s.	d.	Dec. 30.	RETURN.	£	s.	d.
Bought two store pigs	3	8	0	Sold two bacon pigs, weight				
Man driving home ditto ...	0	2	6	732 lbs. at 5½ per lb.	16	15	6	
27½ bush. damaged potatoes	1	7	6	To two pigs' fry's	0	3	0	
1½ bush. of grey peas, given								
whole to the pigs a few								
at a time	0	6	4	Deduct expenses.....	11	10	4	
8 cwt. of barley meal at 10s.								
per cwt.	4	0	0					
9 bushels of barley at 4s. per								
bushel.....	1	16	0					
Grinding ditto at mill, 2s.								
per sack.....	0	6	0					
Lettuces, pot-liquor, straw								
and labour balanced by								
dung	0	4	0	Profit remaining.....	5	8	2	
Man killing two pigs.....								
	11	10	4					

It was now my turn to laugh and joke. I never had pigs that came on better than those did with the salted potatoes. I adopted the practice for two years afterwards; and I salted boiled carrots, parsnips, and yellow globe mangold wurtzel also, but I always did it according to my own palate, and I do not like too much salt with anything.

We came to this place in 1847, where, in consequence of having very near neighbours and being situated in the town, we do not now keep pigs, though we have the credit of it, for the gate-keeper next door does so; and I am often accosted by people who say, "Oh, dear, Mr. Fenn! why don't you advise the rector not to keep pigs? They smell so really offensive every time we turn the corner to go into the park?"—UPWARDS AND ONWARDS.

TEA-MAKING.

MAKING TEA.—The making of tea is a subject every one is so well practised in, that it is scarcely necessary to give directions. The essential requisites are—First, good tea; second, a good teapot—that is, one of plain shape, free from ornaments, which give a larger surface to throw off the heat, or from flutings and mouldings, which prevent the inside being wiped clean and dry after use; third, boiling soft water. When soft water cannot be obtained, a small portion of carbonate of soda is often used to correct the hardness of the water, but in general it is employed in great excess, when it renders the tea soapy and mawkish; for a large teapot a quantity the size of a pea is amply sufficient. As the making of tea is a subject in which every one is interested, we add the directions of two men almost equally celebrated, the one as a poet, the other as a *cuisinier* (or cook).

LEIGH HUNT'S RECIPE.—Dear reader, male or female (very dear, if the latter), do you know how to make good tea? because if you do not, and we have known many otherwise accomplished

persons fail in that desideratum, here is a recipe for you. In the first place the teapot must be thoroughly clean, and the water thoroughly boiling. There should not be a leaf of stale tea left from the last meal. The tests of boiling are various with different people, but there can be no uncertainty if the steam comes out of the lid of the kettle; and it is best therefore to be sure upon that evidence. No good tea can be depended upon from an urn, because an urn cannot be kept boiling, and water should never be put upon tea but in a thoroughly and immediately boiling state. If it has done boiling it should be made to boil again. Boiling, proportion, and attention are the three magic words of tea-making. The water should be soft, hard water being sure to spoil the best tea; and it is advisable to prepare the teapot against a chill by letting a small quantity of hot water stand in it before you begin, emptying it out, of course, when you do so. These premises being taken care of, excellent tea can be made for one person by putting into the pot two or three teaspoonfuls, and as much water as will cover the quantity; let this stand five minutes, and then add as much more as will twice fill the cup you are going to use. Leave this additional water another five minutes, and then, first putting the sugar and milk into the cup, pour out the tea; making sure to put in another cup of boiling water directly.

TEA—SOYER'S PLAN.—Soyer recommends the following plan, and from repeated experience we can speak very decidedly in its favour:—Put the tea in a perfectly clean and dry teapot ten minutes or a quarter of an hour before it is required; warm both the pot and the tea by placing them before the fire; then fill the teapot with boiling water; allow it to stand for five minutes, and it is ready. The method improves the fragrance of the tea very considerably, slightly but pleasantly altering the flavour.—(*Prairie Farmer.*)

OUR LETTER BOX.

DORKING PULLETS NOT LAYING (*A Constant Subscriber*).—We are disposed to think these friends are right who say the birds are over-fat; but we have done so badly ourselves with eggs, spite of every painstaking in food, change, run, age, and selection, that we give an opinion with diffidence. Nevertheless, we think we would diminish the food a little. They are fat at 7 lbs. each, and, when very fat they will not lay. In a park there is choice of natural food; but when they are very fat they will not seek it.

COLOURED DORKING COCK (*An Old Sub*).—A white feather in his tail and a speckled breast would certainly not disqualify him for exhibition. Colour is only essential for Dorkings in the silver-Grey classes. One white spot is enough to disqualify if shown as a Silver-Grey.

HENS ALONE (*Ignoramus*).—They will lay as well as if a cock were their companion.

BREEDING BANTAMS WITH WILLOW LEGS (*Cochin*).—A white-legged Game Bantam cock, and a blue-leg Bantam Game hen, probably would breed chickens, some with white and some with blue legs. We see no reason for thinking they would throw willow.

FATTENING FOWLS (*Idem*).—Ground oats mixed with milk form the best food for fattening fowls or Turkey.

BLACK BANTAMS.—"WILTSHIRE RECTOR" recommends "C. G." to obtain a sitting of eggs in the spring from Mr. Baily, of Mount Street: they would be from pure birds. Good Black Bantams are somewhat rare, and consequently dear. Mr. Baily's cheapest are 10s. each.

DORKING PULLETS AT MANCHESTER (*An Exhibitor*).—We have made the necessary inquiries, and find that you are totally wrong in your suspicions. Under any circumstances, such suspicions could not have been published until you had communicated to us your name.

DUCKS FOR TABLE (*Alpha*).—The Aylesbury is the quickest fatterer. It is not so hardy as the Rouen. The Buenos Ayrean is the handsomest; and, although not as large as the others, it is a prolific and profitable bird. That we recommend.

OAT-BRUISED MILL—SPANISH FOWLS (*N. F.*).—We do not know of a second-hand mill for sale. An advertisement in our columns would perhaps find one. You will in all probability breed good pullets from the cock with a falling comb, but they will produce you lop-combed cocks when you breed from them again. In our opinion it is always a pity to breed from faulty stock.

SPANISH RUNTS SUFFERING FROM COLD (*H. B. P.*).—If the birds are kept fairly warm and well fed, they will soon recover. If the discharge from the nose and eye continues, give a capsule containing a dose of mixed balsam of copaiba and cubeb. This acts as a specific on the diseased mucous membrane, and effects a cure sooner than any other remedy we are acquainted with.

DISEASE IN SHORT-FACED ALMONDS (*Almond*).—The conditions under which you keep your birds appear so perfectly satisfactory that we can only attribute the tubercular disease of the liver to hereditary causes, or to close interbreeding carried to a great extent. We should suggest a change of your present matches, and, if possible, an infusion of new strains.

LIGURIAN BEES (*L.*).—Write to T. Woodbury, Esq., Mount Radford, Exeter, who will give you every information as to price, &c., of Ligurian stocks.

BOTTLE-FEEDER FOR BEES.—There is an error in the reply to "One Who Has Bees." Thirteen lines from the bottom of col. 1, p. 42, the neck is spoken of as "enveloped in the neck," instead of in the *net*.

WEEKLY CALENDAR.

		WEATHER NEAR LONDON IN 1862.																
		JAN. 27—FEB. 2, 1863.																
Day of Mnth	Day of Week.		Barometer.				Wind.	Rain in Inches.	Sun Rises.		Sun Sets.		Moon Rises and Sets.		Moon's Age.	Clock before Sun.	Day of Year.	
									m.	h.	m.	h.	m.	h.				
27	Tu	Hermann d. 1695. B.	30.185—30.927	degrees.				m.	h.	m.	h.	m.	h.			m.	s.	27
28	W	Agardh d. 1859.	29.805—29.733	49—31	S.	—		49	af 7	37	af 4	39	1	8	13	1		27
29	Th	T. Martyn d. 1768. B.	29.766—29.628	53—40	S.	.06		47	7	39	4	44	2	9	13	12		28
30	F	W. Aiton d. 1793. G. & B.	29.650—29.595	54—45	S.W.	.08		46	7	41	4	43	3	10	13	23		29
31	S	Sir Ashton Lever d. 1788.	29.748—29.683	54—44	S.W.	.32		45	7	43	4	35	4	11	13	33		30
1	SUN	SEPTUAGESIMA SUNDAY.	29.962—29.809	55—48	S.W.	.02		43	7	44	4	21	5	12	13	43		31
2	M	PURIFICATION. CANDLEMAS DAY.	30.076—30.008	54—44	W.	—		41	7	47	4	58	5	13	13	51		32
				53—44	S.W.	—		40	7	48	4	29	6	14	13	69		33

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 44.1° and 30.7° respectively. The greatest heat, 57°, occurred on the 1st, in 1852; and the lowest cold, 8°, on the 31st, in 1857. During the period 144 days were fine, and on 108 rain fell.

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THE IMPROVEMENT OF CLAYEY SOILS.



HAVING observed that you have recently had to reply to several inquiries concerning the improvement of clayey soils, I have thought that my experience in so important a matter might be acceptable to your pages, and, I hope, instructive to those of your readers who may unfortunately have to supply fruits and vegetables from a garden, the soil of which is a rank clay. Those alone who have had that disheartening work, and the almost insurmountable difficulties to combat in producing from such a soil all that is generally expected as the produce of a gentleman's garden, can fully realise how exceedingly desirable it must be to carry out any process which will change a stiff, tenacious, damp clay to a more friable and fertile staple.

When I entered on the care of the gardens at Dyrham Park some fourteen years ago, the worthy proprietor had previously decided to burn a very considerable extent of the soil, which was of a more clayey description than any that ever I had seen enclosed with garden walls. Capt. Trotter took the idea from the Great Northern Railway Company in their operation of burning in that neighbourhood immense quantities of clay, turning it into something like pounded bricks, for the purpose of putting between the rails instead of gravel.

Accordingly when I went to Dyrham, the burning process had been commenced, and a patch or two had been burned and cropped. But the method pursued was simply to burn a heap in the centre of a quarter, taking the soil just as it came, top and bottom spit, round the fire, and then to spread it generally over the surface, and crop it. The summer being a very hot and dry one, vegetation simply existed among so dry and porous a material, it being more like red brick-dust than anything else.

After having satisfied myself that this burning process, if properly carried out, would prove a thorough renovator of so terrible a soil to work, and having been informed that the garden was well drained, I set about the work of burning to a large extent; and I cannot here do better than describe the mode of burning in the words made use of on a previous occasion.

As soon as a quarter became vacant, a fire or two was started, according to the size of the quarter. When only one fire was required, it was, of course, started in the middle. The site for the fire was first trenched to the depth of 2 feet 9 inches, turning the top spit (which had through a long course of years been improved a little by liming, the addition of ashes, road-scrappings, &c.), into the bottom of the trench, taking out the two bottom spits for burning. So thoroughly clayey was the greater part of the soil moved, that the men had to dip their tools in a

pail of water at every lift, to make the next spadeful slip off the metal. On this site the fire was commenced. Wood which was only fit for charring or firewood, and which is generally plentiful enough about most gentlemen's places, was used. In that locality coal was costly, and not so effective in this case as wood; the latter also affording in burning a desirable quantity of potash. The site for the fire being ready, a little stack of wood was formed 5 feet in diameter at the base, tapering conelike to the height of 5 feet, beginning with a few dry faggots in the middle, and finishing with stronger junks of wood round the outside. All round this stack of wood a coating of the clay was laid on to the depth of about a foot. It was found best to pack it on in lumps as it was turned out of the trench. When this was done the wood was set fire to at the centre, and long ere the wood was all consumed the clay caught fire and burned freely. As soon as the first layer was nearly burned through another layer was added all round, which in its turn soon burned through also. The fire was then broken down with a strong iron-handled hoe, for the double purpose of adding more wood to quicken the fire, and enlarging the basis of operations. After the fire was thus set agoing the wood was of necessity laid horizontally over the burning heap, putting the strongest pieces of wood next the burning mass, and finishing off the layer with the smallest, to prevent the clay from lying too closely to the wood and obstructing the draught necessary to combustion.

In the meantime trenches were opened at the extremities of the quarter, and the clay taken out, as already described in making the site for the fire, and forwarded to the fire, there being the solid undisturbed surface to wheel it over, and the distance lessened as the fire became larger and required more feeding. But to return to the fire. When it was again found necessary to break it down for the purpose of extending the base, and increasing its capacity for consuming the clay, another layer of wood was added, and then a layer of clay over the surface, and all round the outside of the heap. After this, as the layer of clay was burned through, another was packed on all over and round without any wood, and so on with two or three layers, till it became necessary to enlarge the base of the fire, by drawing it down from the top, then more wood was added; and from the great power which the fire attains it is necessary to have plenty of clay and men at hand to cover over the wood quickly, or it would be consumed without doing much good; and so this process was continued till the necessary quantity was burned. I have frequently had three great fires going at a time, on to the tops of which I have wheeled layers of clay to the thickness of 3 feet and more at a time. When the fire became powerful it formed a solid pile of fire, which very soon worked its way through thick and successive layers of clay, transforming what was once an insoluble, wet, tenacious paste, into a heap of material greatly altered in its mechanical properties, and with a great capacity for the absorption of ammonia, besides being mixed with charred wood and potash.

As soon as the heap was sufficiently cool to be moved

it was wheeled back over the surface of the quarter and regularly spread, and the large lumps broken-up. On the surface of all was wheeled a garden rubbish-heap, rotten leaves, road-scrappings, dung, and any other decayed vegetable matter that could be obtained. A trench was then opened at the end of the quarter, and the whole was turned over and mixed the same as is done with a compost-heap, to the depth of the original clay, which was forked-up as well as it would allow at the bottom of each trench. This formed a staple on which almost any crop that could be put on it in the way of vegetables grew with such a luxuriance as I have never seen equalled either before or since. I have seen Brussels Sprouts over 4 feet in height, studded with hard sprouts more like a rope of Onions than anything else. Peas, Cauliflowers, &c., were amazingly fine crops. One quarter which I burned in 1854 had the finest crop of Carrots that could be desired, and to have attempted such a crop on it previous to its being passed through the fiery ordeal, would have been in vain.

The expense attending such an operation as that just described, will, of course, occur to the minds of those whom such a matter may concern. I am sorry to say that I can give no accurate estimate of the expense per acre, as no account was kept of the cost. This, however, I know, that it is not so much as some might imagine. In my case, with the exception of two extra labourers the first autumn and part of the winter, the whole of the work was done in the autumn and winter by the ordinary allowance of men for the place, and the money value of the wood consumed was not worth thinking of, as it was simply such as was fit only for firewood. I feel convinced there is no other way of overcoming so well the difficulties and unprofitable labour connected with such a soil.—DAVID THOMSON, *Archerfield Gardens*.

KEEPING ICE.

ABOUT this time last year this campaign concluded in articles of peace, I believe, to the satisfaction of us all, and to the good of our readers. Much of prejudice and preconceived notions was removed, and the practice and science of the question were proved and vindicated the one by the other.

The subject being a very cold one, I take it the temperature of the parties engaged in the strife is by this time sufficiently near "temperate" to admit of the chronicles of the campaign being written by one of the combatants. But that was not what induced me to write about ice to-day, for I had not the smallest intention to blunt a pen on it this season until the middle of January; but having read the article on "American Ice-houses" at page 31, as extracted from the *Canadian Agriculturist*, I have swerved from my purpose; more especially because an innocent gentleman, whose good opinion I am very jealous about, has been led into a mistake about my views on ice-keeping by one of those common blunders which none of us can account for.

Mr. J. Anderson, of Meadow Bank, Uddingstone, in the west of Scotland, is the gentleman I allude to. He was not a reader of the first volumes of the old COTTAGE GARDENER, where is recorded the reason why we drifted into that war. The "why" is briefly this.

The old ice-house at Shrubland Park, in a steep bank of pure white sand of very great depth, never did keep ice since it was made, about the time the Duke of York reviewed the volunteers there, which the first baronet of Shrubland raised to resist the threatened invasion of the first Napoleon. My predecessor, Mr. Lindsay, then from Highclere, introduced the ice-stack system about five or six and twenty years since, and was very successful with it. He told me it would be of no use trusting to the old ice-house, nor did I, and for the next fifteen years the ice-stack never failed once; and we never reached the bottom of it in any one year till the foundation had to be regulated for the next start.

This ice-house, however, was filled and used as a game-larder and kitchen-garden preserve, just as the Canadian farm has it. I had not the least merit as regards the ice-stack; I did it exactly as Mr. Lindsay told me. The expense of forming it and obtaining the ice daily from it for three or four months was not one-half so much as that of putting the ice into and taking it out of the ice-house, from which a bucket of ice was never drawn in my time.

When my tether was nearly run at Shrubland, a great landed gentleman, the owner of Helmingham Hall, in Suffolk, who had just finished a new castle in Cheshire, told me his architect made

him an ice-house there all above-ground, and thoroughly ventilated from end to end, and that ice kept better in that way than by the old plan. I ventilated the old house, which never would keep ice, and for the next three years it kept the ice just as well as the stack; so I had no merit in the question at all, unless it was to battle with prejudice against scientific truth, as I always did and will do.

The ice-house which Mr. Tollemache's architect made—J. Tollemache, Esq., M.P. for Cheshire—is as near as possible like the American ice-house transferred to our columns the week before last—so near, indeed, that the said architect must have had his notions from Canada, or else the Canadians had a leaf out of THE COTTAGE GARDENER some dozen years since. But neither Mr. Tollemache's architect, nor the Canadian farmers, nor yet your humble servant, ever said one word about ventilating ice at all, and there was where all the cause of the war lay, and through that lucky mistake the war had room and scope enough to last for twelve years.

I saw how the tide was likely to flood the cellars and the cobwebs, and I went quietly and put it on the record as early as 1851, that in all this ventilation no particle of air must reach the ice. In Vol. V., page 148, for December the 5th, 1851, you will find it written thus:—"Currents of air to carry off the vapours arising from the slow melting of the ice are the prime consideration in ice-keeping; and confining the passages by any means to prevent the escape of these vapours is a fertile source of waste and extravagance. Those who have read the way in which this was proved and explained, may be curious to know whether we have since made any alteration or improvement in the plan. To which I may reply, None whatever. There has been a strong current of air passing over the ice day and night, summer and winter, ever since; but some have misunderstood the plan so far as to suppose that the air-currents are allowed to reach the ice itself." That was the lucky mistake which brought so much and such good grist to my mill, and did I not grind it as well as any ice was ever ground, or pounded by pond or brook?

"To suppose that air-currents were allowed to reach the ice itself. That, indeed, would be worse than the whole mode of stifling, by which so much ice was formerly wasted." Of course it would.

Mr. Bailey, of Nuneham Park, gave a plan this time last year (Vol. XXVII., page 379), of an ice-house, ventilated as I described then, 1851, but not quite so efficient. Mr. Bailey calls it an American plan that is in use at Lord Lilford's, in Northamptonshire, and Lord Jersey's, in Oxfordshire, "for carrying off the condensed moisture, which hourly would be exerting its wasting influence on the ice." That is to say, the principle on which Mr. Tollemache's architect built the ice-house in Cheshire was applied by these noble lords and their agents to the old ice-house, just as was done at Shrubland fourteen or fifteen years ago, and with the same result.

You will see by the plan that these noblemen did not adopt the marrow of the American plan, by not letting off the air by the highest part of the roof, the crown of the arch over the ice, so they have to regulate the ventilation to the state of the weather. But the Canadian of this, our current Volume, page 31, has it in the true American style; but from that description those who are not much acquainted with the forms and fashions of ice-houses may find it very difficult to understand the whole process. I recommended the architect's plan very much at the time; also, the conversion of the old ice-house to that principle; and there is another most useful feature attached to this present Canadian ice-house which it would be treason on the part of a captain not to recommend and bring more prominently before us, if only to prevent another twelve-years war on a wrong scent: therefore, I do hereby recommend with all my force, that ice-houses should henceforth be built in this country above-ground, and on the plan and principle of that Canadian ice-house at page 31 of this Volume of the Journal. It is far more difficult to preserve ice in Canada than in England, seeing the summers there are so much warmer than with us.

The ice-house in Cheshire was built aboveground like a cottage so much in length, breadth, and depth, with brick walls, two end gables, and a span-roof. The ice was filled-in to the height of the side walls, and was covered with straw; the whole space in the roof was empty, and a ventilator in each gable, near the ridge, secured a current of air through the empty space from end to end without touching the ice at all, for warm air will never sink an inch into a cooler stratum, if it has a free course on the higher level, as in that instance.

The present Canadian-house is on a slope; it is 18 feet long, 15 feet wide, and 14 feet deep, with the bottom 4 or 5 feet sunk in the earth. The filling, or ice, is up to the height of the walls, then a straw covering on the ice, and above the straw 6 feet of empty space under the span-roof, to speak in garden language. A ventilator is in the ridge of the roof at one end, and a door in the bottom of the wall at the other end, and just within the door a four-foot-square space is fenced-off from the ice, that space being open as high as 14 feet, the top of the ice, and then communicating with the six-foot empty space over the ice.

Now, that empty space at the end of the ice-house is the Canadian dairy and store-room for things requiring to be kept cool, and the door into the dairy is opened on an average—say so many times a-day. Every time that door is opened a volume of hot air, sometimes at 96°, 4 feet square, rushes into the ice-house, then up the “shaft” 14 feet, and along the top over the ice to the ventilator in the ridge at the other end, yet that large volume of hot air so passing from the very bottom of the ice at one end to the top, and along the top to the other end, does not affect the ice in the least—that is to say, a column 4 feet square and 20 feet in perpendicular height is only separated by a covering of 6 inches in thickness of sawdust, and so much straw from the ice, and yet the farmer tells his brother proprietors from actual experience, and through their own organ, the *Canadian Agriculturist*, that an ice-house constructed in that manner “is one of the best investments for a farmer.”

But an entirely new turn has just taken place on the question of ice-keeping. Many people have run away with the idea that they could keep a few loads of ice in a stack, or in a shed, or in some kind of underground contrivance. There are three such attempts on my books from my own part of the county of Surrey, and the same tale has been told at our office—all a dead failure, of course, and all also arising from this driving of warm air full against the heaps of ice. Now, I must say in earnest that to attempt to preserve twenty, thirty, or forty loads of ice is only throwing money under the ice. I said fifty loads are about the smallest quantity that should be tried; but I was very wrong in the calculation—I forgot the difference between a load of ice and a load of sand. Can any one tell me the quantity of ice that should be in a load of it?

As far as I know, a load of ice is no given quantity at all. A Scotch cart will carry as much in one load as two of many English carts. When I said fifty loads of ice I meant the bulk of fifty loads of sand or fifty solid yards. The probability is that it would need seventy-five common cartloads of ice to make the fifty loads, or fifty solid yards in my calculation. But suppose you start with sixty fair good loads of it for a trial. I should not like to trust the packing of it, or the openings to get to it and from it, to a person who was not a thoroughly good hand at that branch by previous experience.

If you calculate the capacity of that Canadian ice-house—the good-investment-house—it will make you open your eyes if your notions are under a hundred loads in a lump. Just calculate how many solid yards or loads are in 18 feet by 15 feet, and 14 feet, the dimensions of the said house, and then take from it the quantity made by 4 feet square and 14 feet in depth, and you will find the quantity of ice is comparatively enormous.

After all, ten to one if that Canadian landholder is not a Scotchman, and, if he is, he only followed the best practice of my countrymen to a better issue; for, if you recollect, that Scotch gentleman whose good opinion I am so particular about—Mr. Anderson, of Meadow Bank, told us about this time last year that the best contrivance he had seen in the west of Scotland had four hundred loads of ice in it, and their carts there and their Clydesdale horses are much better for the purpose than we could find in England. That was, indeed, the best contrivance we had in the whole campaign—a kind of rustic shed on the north side of a wall; but recollect, the walls in Scotland are of stone, and are so much thicker and so much better for putting ice against than brick walls—that should be allowed for in the calculation.

As far as I can make out, bricks are the very worst of materials to put ice against; they absorb moisture fast and keep it as long afterwards as there is any damp or wet within the influence of their sucking powers. But just think of the difference between twenty English cartloads and four hundred loads out of a Scotch cart! I have kept under a hundred good cartloads in a stack till ice came again; and the expense of harvesting it could not be much more per hundred than where the four hundred loads were put, for the carts took it to the spot. D. BEATON.

FLOWERS OF THE LAST SEASON.

GREENHOUSE PELARGONIUMS.

In these railroad days it is hard work to keep up with things at the rate at which they go. Every one seems pushing on at express speed. Competition is endless; and we have hardly time to take our cup of coffee before the bell rings and we are off again, protesting all the while that it is very hard lines to be allowed no breathing time. It is so, I am sure, in gardening. One set of new flowers is hardly grown, notes taken of them, and determination to let all the world (because, of course, any one who is somebody reads *THE JOURNAL OF HORTICULTURE*), know about them, when lo! another little lot comes in to put their noses out of joint; and I am sure if flowers were all sensitive plants, they would feel quite as sulky as does Master Knickerbocker when he finds the baby boy with which he was so delighted at first has absorbed the attention which he alone formerly received. It seems a long while ago since the Pelargoniums of which I now write were exhibited as seedlings; and I believe in the present instance this feeling is greatly increased, owing to the superior excellence of the seedlings of last season. We do not much care to know about anything, good though it may be, when we know that there is something much better of the same sort coming on; and the year 1861-62 was not particularly distinguished for the excellence of its seedling Pelargoniums, although there were some flowers of real merit amongst them.

It is, of course, well known that Mr. Charles Turner, of the Royal Nursery, Slough, stands A1 as the letter-out of new Pelargoniums, Messrs. Dobson & Sons being the only other firm from whom they emanate, they only letting-out their own seedlings; while Mr. Turner, in addition to those he raises himself, has on his list the flowers of those well-known raisers S. W. Hoyle, Esq., of Reading, E. Foster, Esq., of Clewer Manor, and W. Beck, Esq., of Worton Cottage, Isleworth. It is of their flowers, then, that I now specially write, as Mr. Turner has most kindly every year furnished me with plants, and thus given me an opportunity of ascertaining their merits which I should not have otherwise had.

The gradually-widening circle of Pelargoniums has now reached four distinct sorts—the Large-flowering, Fancies, Spotted, and French or Bizarre—odd-looking flowers, which, however, tend much to the gaiety of the house from their profusion of bloom. The first-named class being, however, I think, the more general favourites, instead of naming all those which were sent out in the autumn of 1861, I shall rather select those which seemed to me to have any peculiar merit.

LARGE-FLOWERING PELARGONIUMS.

Arcturus (Beck), this is one of those brilliant scarlet flowers which are always attractive. The petals were well held together, and not inclined, as some are, to become loose and open.

Alba Regina (Beck), a pretty flower of Fairest-of-the-Fair style of growth. With me the blooms were small, although the colour was very pleasing.

Celeste (Hoyle), this was one of the most novel of the new flowers, the colour being a brilliant orange maroon with clear white centre. A fine plant of it was exhibited by Mr. Charles Turner in one of his collections, and was greatly admired. With me it had an inclination to crumple in the top petals. If this defect should disappear it will be a great addition, owing to the beauty of its colour.

Mrs. Hoyle (Hoyle), another very beautiful light flower; the colour a sort of light violet rose; small black spot on the top petals. A large and free-flowering variety.

Princetta (Hoyle), one of those painted flowers which are to my mind so very attractive, and this was a fine variety of the kind; very dark top petals, in fact, rich glossy black, with a narrow crimson margin; lower petals richly painted with rose and dark red.

Sylph (Beck), a nice, neat-looking flower; white ground, with purple on top petals.

Lord Chancellor (Foster), a nicely-shaped flower; the lower petals richly painted; the top ones dark maroon; centre of flower white.

Patroness (Turner), a large white flower, somewhat in the style of Ariel; crimson spot on top petals. The habit of this plant is excellent.

SPOTTED PELARGONIUMS.

Cyrax (Hoyle), lower petals rosy lilac, maroon spots; centre of flower white.

Diophantus (Turner), a large showy flower, bright red with maroon spots, but apt to run we think.

Leo (Hoyle), bright orange rose. A dark and showy-looking variety.

Mira (Beck), rose with white edges, black spots on the five petals. A very free and pretty variety.

FANCY PELARGONIUMS.

Emperor of Morocco (Turner), rich mulberry, lilac throat and edges; fine form and substance. A very dark and striking variety.

First Favourite (Turner), deep rich maroon, with white throat and margin. Very pretty and somewhat new in colour.

Undine (Turner), a large rosy lake, with light throat and edges. Very fine show flower.

These are, I think, amongst the best of last year's flowers; and now, as I look at the weeding process that has taken place in my little tumble-down greenhouse, and see how few of the large batch of last year I have kept, and watch with some degree of interest my thirty or forty new varieties which, through the kindness of Mr. Turner and Messrs. Dobson, I see now pushing their way on my shelves, I wonder what their fate will be—whether the observations of cynical critics on the new ones were true, that they were so dressed and handled, that it would be no more possible to recognise them when under different hands than it would be to recognise the old dowager when, her false hair, and teeth, and rouge laid aside, she appears rather fitted for being a member of that “ugly club,” immortalised by the “Spectator.” I do not believe in such *saur kraut* remarks, and look forward with much pleasure to seeing each beauteous novelty expanding its charms before my eyes. Still, if it be so, it shall be duly chronicled, my simple object being to give reliable information, so far as my own judgment goes, on all these various matters; and I am sure the cause of floriculture, as, indeed, every other cause, from the very highest of all, that of the truth itself, is better advanced by fair and honest statements than by any flattering or one-sided views.—D., Deal.

VENTILATION OF HORTICULTURAL STRUCTURES.

AMONGST the many topics to which public attention has been directed of late years that of ventilation has attracted its full share, and treatise after treatise has been written on the subject. Sometimes new and startling theories are advanced but to be refuted, and other theories in turn put forth until, I fear, it may be said that the laws which govern the circulation of air are but imperfectly known. However, the spirit of inquiring abroad has elicited much useful information, and although we are far from being perfect in the practice, an advance has been made, and inquiry being again afloat it is likely not to rest until some useful results are secured.

Taken in a comprehensive sense the term “ventilation,” or the due admission and distribution of wholesome air, is more important than may at first be supposed. It is also a subject of much greater difficulty than many imagine. Look, for instance, at our coal mines, and see the lamentable accidents that take place from time to time, and this, too, in spite of all the precautions that skill and science could adopt to avert such a calamity. But ventilation below ground is not the subject for our consideration, our province is fortunately on the surface; but even as regards this much diversity of opinion exists, and now and then extreme views are put forth.

Some years ago a great authority in such matters, to whom the ventilation of the Houses of Parliament was entrusted, startled the world by propounding a new law on the subject of currents of air, and some of the law courts in other parts of the kingdom then building were submitted to his mode of treating them. One of the peculiarities of this I remember, in one place at least, was that the windows were closely fastened down, and on the Judge complaining of the heat in court on a warm summer's day, he was told the windows were purposely so fastened by the designer of this mode of ventilation, on which his lordship very properly exercised his own judgment in the matter by directing his attendants with their long wands to break the glass. This was done alike to the comfort and amusement of the court; and the plan of the popular champion of ventilation of some twenty or more years ago fell to the ground, and has been since generally condemned, and the old and certainly far-from-improper

notion that vitiated air finds its way to the top, and that it ought at once to escape there, has been revived.

Various and manifold have been the means adopted to attain that end; not the least useful are those simple contrivances we so often see in the smoking-rooms of taverns and other places, which very often assume an ornamental shape, and sometimes also are turned to account in another way. By far the prettiest feature of this kind I ever saw was in the coffee-room of an inn at Truro. The ceiling of the long room was crossed in the centre by a highly ornamental open-work cast-iron girder forming an elliptic arch, and in substance about a foot thick. I believe, but am not certain, that this girder carried a wall and stack of chimnies above; but suffice it here to say that its appearance was good, adding importance to rather than detracting from the noble room it was placed in, and I believe it answered admirably. Doubtless its ends communicated with the outward air.

Taking glass structures as a whole, it is easy to conceive that in the generality of these a certain influx and efflux of air must at all times be going on; and in some old-fashioned houses, where the squares of glass are small and the interstices open, the quantities of air admitted by such means must be very great, while, it is needless to say, as much internal air must be ejected. This influx and efflux will be the greater in proportion to the difference in the temperatures in the internal and external air; and assuming for argument that the occupants of the house require a night temperature of 60°, it follows that a larger proportion of outward air is sucked into this house on a cold frosty night than on a mild dull day. This, of course, is at the expense of the mode of heating adopted: hence the more-recently-built houses are a nearer approach to being air-tight, the overlaps being fewer and much closer, and the framework made to fit as well as it can be made. But serious as is the loss of heat in one of the old-fashioned houses spoken of, if the necessary warmth required by the plants inside can be maintained, there are many plants which do better in such a position than when in a more fashionable and more air-tight dwelling: hence we often hear of gardeners lamenting how well certain plants did in the rickety old house compared with what they do in the new one—and this is no illusion; for such plants as require a continuous refreshing of pure air, its circulation cannot be too great when accompanied with the genial warmth they also stand in need of. All plants cultivated in our hothouses are nevertheless not alike in this, some requiring the close confined atmosphere of the stove, while others delight in the more open breeze.

It would be tedious in an article of this kind to go into the history of each plant. Let us, therefore, just take a rough survey of the contents of an ordinary plant-stove—such, for instance, as we often meet with in gardens that may have two or three houses devoted to the culture of plants. In such a house it is not unusual to find some Ferns, Orchids, hard and soft wooded plants, with bulbs and creepers, and probably some succulent plants as well. Now, though the amount of heat which each of these plants requires differs but little in any case, that is perhaps the only condition they agree in. The other features of air and moisture differ widely. Take, for instance, a Cactus basking in the full blaze of a tropical sun, and compare this with a Begonia, a Cissus, or a Maranta occupying the plains and densely shaded by the trees of the tropical forest; while midway between these last-named plants and the open air, as the space above the trees may be called, are nestled in the claws and forks of these monarchs of the forest some of the most lovely of our Orchids, existing as they do in a great measure on the humidity of the atmosphere which surrounds them at a certain season when they make their allotted growth and progress, while at another period the dryness of the air permits them to take their allotted rest so necessary to enable them to commence their duties again with vigour at the proper time. Compare these widely-conflicting conditions of the plants we endeavour to cultivate, and the wonder will cease that some of them do not answer so well as could be wished. A steady uniform warmth is associated with an idea of comfort; but it is at variance with all Nature's works, and as such ought to be received with caution. But periods of steady treatment are as necessary here as elsewhere, selecting the proper time from the known history of the plant to give this. That much is done in this way cannot be denied; but the mixture of subjects in an ordinary plant-house prevents the treatment being carried out to the full extent necessary to the individual welfare of each plant contained therein.

Taking another class of plants occupying a glass structure, we have also very wide dissimilarity of climates to reconcile in an artificial abode. The gales, might we not call them hurricanes? which move the plants almost to uprooting them, that occupy the crests of a mountain region like the Cape of Good Hope and elsewhere, differ so widely from the more calm abode of plants occupying the flat plains of Australia, and elsewhere, that we need not wonder at a Cape Heath being affected with mildew when subjected to the dull murky air of a closely-pent-up house; while in the latter, such plants as occupy the temperate region exempt from storm, and, probably, like the *Calceolaria* and Chinese Primrose growing under trees, are more at home here than when subjected to strong currents of air. That there are many intermediate classes of plants is superfluous to admit, and it is from the numbers of them and from other sources that our general treatment of the whole ought to be guided. Let us see how this has been done, or rather let us see in what way the best results are likely to ensue, having reference to the other conditions necessary to be observed at the same time.

If we take an ordinary lean-to house in summer time, we shall see that if it faces the south, the amount of heat it receives from the bright glare of sunshine is immense; and if no outlet be made for the escape of this heat, it will speedily increase beyond the endurance of the plants inside.

An ordinary frame or pit, with the glass and woodwork fitting closely, speedily becomes heated to an inordinate degree, and many a batch of Cucumbers have fallen victims to not receiving fresh air in time; large houses, where the volume of air enclosed is large in proportion to the heating surface, become heated less quickly, and, consequently, the plants within them suffer less; so that close attendance on the air necessary for frames is an important part of the duties of the gardener in charge. Thus the amateur must bear this in mind, and not be led to think that a small object requires little attention, for in the matter of frames or pits, and houses, the former suffer most if not attended to in time. The practical man knows this full well, and he often takes a sort of half-and-half precaution, by leaving at all times a little opening, not sufficient to meet the wants of a bright sunny day, but enough to provide against a little bright weather that may occur in his temporary absence.

To reduce the proper time of giving and taking away air from a number of glass structures devoted to different purposes, to anything like a regular tabular form or scale, is to attempt to revert to the practice of our grandfathers, whose adherence to the figures of the thermometer has been long since set aside. So many local and other conditions also militate against this, that we cannot give even general instructions on the matter without allowing for the many exceptions that are likely to arise, not the least being the different aspects of the structure requiring air, the plants cultivated therein, as well as the time of year, and, in fact, many other considerations of a similar character. Thus, a lean-to house, or a frame, facing the south-east, will require air to be admitted long before a similar structure that faces the south-west will want it. So, also, the proper time for shutting-up the one will be long before that of the other.

Some other conditions also must be considered, and some classes of houses require less air to be given them than others. A span-roofed house, with the gable facing the south heats much less quickly than a lean-to; while amongst the latter a Grape-house, with the roof well covered with foliage, is much slower in becoming hot than one less covered. The condition of the external air must, in a great measure, determine the time and circumstance of giving air, and the character of the heating apparatus has also its full share of influence; for, be it remembered, that in general the greatest number of plants in a growing condition benefit most by plentiful admissions of external air, tempered, in some measure, before coming in contact with them, but that such admissions are at the expense of the heating apparatus. It is, therefore, with a view to save the latter, that most houses requiring artificial heat are shut-up early in the afternoon, in order to shut-in as large an amount of sun heat as possible. The heat shut-in may often be from 20° to 30° more than the minimum night temperature.

Many other considerations often have to be attended to, the expense of fuel being a great inducement to shut-in as much sun heat as the plants will bear; and, in the case of frame plants not receiving heat from other than the fermenting material of the bed, it is advisable to shut-up early in order to save all the heat. Covering the glass over soon after with mats on an extremely frosty afternoon will, in a measure, prevent the escape of much of the heat.

Houses, where there is a scarcity of coal or other heating material, may be treated in like manner; the character of the outward air and the appearance of the evening determining what is best to be done. I may, however, say that in very severe weather, there is no harm in almost all houses being allowed to fall from 5° to 8° lower than what at other times is regarded as their standard.

Greenhouse plants will take no particular harm at 36°, nor those of the stove at 50°, while in milder weather they may be 10° higher.

I only point out these facts to the inexperienced, but they must not take any further liberties until they have learned by experience how much plants will bear.

I may say, in conclusion, that the garden structure requiring the least amount of fresh air to be given, is the cutting-frame or propagating-house; a close confined atmosphere favouring the formation of new roots. A Fern-house also requires little air, and so does one devoted to the growth of Orchids; while Pines, Cucumbers, and Melons, being tropical fruits, require much less than those from the temperate regions of the earth; but the time, and mode of giving air, the quantity, and many other particulars are too much for the present communication, so I must defer noticing them until another opportunity.

J. ROBSON.

HORTICULTURAL SHOWS IN THE NORTH OF IRELAND.

At page 25 of THE JOURNAL OF HORTICULTURE, "A PRACTICAL GARDENER" communicates some strictures on horticultural shows in the north of Ireland. Lest some of your readers should form a bad opinion of us here, I trouble you with the following remarks.

He says he was desirous of advancing the interests of horticulture in his own immediate neighbourhood, but was disqualified from attending one show from the fact of his employer not being an annual subscriber to the Society, and blames the Committee, some of them gentlemen's gardeners, for it.

In the north of Ireland, gardeners are not recognised at the shows to the same extent as in England. The plants are not entered in their names, neither do their names appear prominently in the award cards. The societies are kept up by annual subscriptions, and, to insure an interest being taken in the exhibitions, none but subscribers are qualified to compete. Surely "A PRACTICAL GARDENER" can find no fault with this, as it is calculated to promote the interests of local horticulture, the only object local societies aim at.

Speaking of another Society, he objects because he was not permitted to carry off more than one prize in each class. Every one at all acquainted with horticultural societies is aware of the universality of a rule to this effect. He is dissatisfied also, because the second best dishes or collections were awarded second prize, "no matter how inferior." This was not the fault of the Committee but of the Judges, who, in all cases, are authorised to withhold prizes should the subjects not be of sufficient merit. But, it fortunately happened on this occasion, the Judges were of a more liberal mind than "A PRACTICAL GARDENER," and did award the prizes, as an inducement to further care and attention on the part of the gardeners.

With regard to the last part of his communication. On one occasion, in the north of Ireland, a rule was enforced that all prize fruit was to become the property of the Society, but money prizes more than treble the value of the fruit were offered as inducements to competitors. The fruit was retained for a special purpose, which was publicly known, and surely there was no compulsion in the matter. "A PRACTICAL GARDENER" might or might not have competed just as he pleased. This happened some time since, and was the only occasion on which such a rule was carried out for the last twenty-five years.—HIBERNICUS.

MISTLETOE ON THE OAK.—Having read in one of your late Numbers an article on the Mistletoe, in which you speak of its being rarely found on the Oak, and do not name any place where it is still to be seen, I write to tell you that there is a fair-sized plant of it growing on an Oak on the land of H. Howard, Esq., Thornbury Castle, near Bristol, and which has been there for several years—marvellously eluding the ruthless hand of Christmas decorators.—CONSTANT READER.

COCOA-NUT FIBRE DUST AS A COVERING FOR HOT-WATER PIPES.

I THINK if your correspondent, "J. M.," (page 32) were to read Mr. Beaton's remarks in the previous Number of your Journal, page 3, he would discover that the cause of the cocoa-nut refuse not becoming hot was its being allowed to become too dry. I have experienced a similar instance. Last spring I covered-up my hot-water pipes with this refuse, taking care to keep it wet, particularly where in contact with the pipes, and it answered admirably.

For the last six weeks I have not been able to attend to my little propagating-house, and my man, who is no gardener, suffered the refuse to become dry, and, consequently, he could not make it hot. On removing it I found about 2 inches thick round the pipes completely caked, very dry, and lighter than cork. I made the whole quite wet with warm water, and again covered-up the pipes about 10 inches thick, plunging pots in it as before. I now find the surface very little warmer than the temperature of the house, but on lifting the pots steam immediately rises, and the stuff is very hot near the pipes.

In another part of my greenhouse I filled-up the space from the ground to the bottom of the pipes to prevent the heat escaping, and then filled-up with broken pieces of brick even with the top of the pipes, making a flat surface, on which I placed a thin sheet of iron. On this I spread cocoa-nut refuse about 3 inches thick, sprinkling it with warm water occasionally to keep it moist, and by so doing I obtain an even and regular heat over the surface.

I have been informed by an engineer that if this refuse is made quite dry, it is the best nonconductor of heat that could be used for covering-up steam boilers. I have also heard it recommended as a casing for cold frames or pits. About 3 inches thick will keep out the severest frost; but it must be made quite dry and kept so. Gardeners and agriculturists are using this cocoa-nut refuse very freely; but we shall probably hear of its being applied to other purposes soon.—H. E.

CHEAP CROCUS-HOLDER.

I AM unaware whether any of the readers of the Journal have ever seen the following cheap Crocus-holder; if not, the description may be of some service; it is, at all events, no very costly experiment to try.



Take a large sound Turnip, and hollow it out from the bottom, taking care not to injure the base of the leaves, and allowing the rind to be at least half an inch in thickness all round; then bend a piece of wire (zinc is best from not corroding) into a circular form, and place the Turnip upon it, leaves downwards, having previously trimmed-off the large ones. The hollow is then to be filled with silver sand, a Crocus root planted therein, and three wires or strings attached to the ring to support the whole upon a hook fixed in the upper part of the window-frame. The sand being kept moist, the Turnip will soon shoot-out leaves, which, turning upwards, in a short time completely hide the root, and present a pretty

and novel appearance during the winter season.—A CORRESPONDENT.

GLOBE ARTICHOKE NOT QUITE HARDY.

I CAN testify that the Globe Artichoke is not able to stand a very severe frost unless protection be used. I well recollect having in my apprentice years—it must be at least twenty years ago—seen all the plants in a large quarter of the garden destroyed by the frost, which was very severe that winter. The plants had no protection. The soil in which they were growing was a very light, gravelly, dry, porous loam, upon a sandstone sub-soil, with an angle of about 25° to the north, situated six miles and a half west of Edinburgh.

So far as I then could judge, those plants must have occupied the same ground for several years, the stools being very large and producing a very large quantity of excellent heads.

It had been formerly the practice there to have the Globe Artichokes protected, but this had been omitted that winter.—JAMES REID.

INFLUENCE OF POLLEN ON THE APPEARANCE OF SEED.

Few facts in vegetable physiology are more remarkable than the well-ascertained influence of the pollen of one species or variety on the seed and fruit of another species or variety whilst still attached to the female plant. There are several old accounts, and the case has been well proved by Gärtner of the colour of the pea in one variety of the Garden Pea, being changed by the direct action of the pollen of another differently-coloured variety. So, again, the famous St. Valery Apple tree produces many different kinds of fruit, according to the nature of the pollen used; for the singularly-constructed flowers yield no pollen, and they are annually fertilised by a party of French girls, who bring pollen from other trees, and mark with ribbons the flowers thus fertilised. About a year ago Mr. Beaton gave an analogous case, far more remarkable than any hitherto recorded, for he showed (if my memory does not deceive me) that the pollen of one species acted on the footstalk of the seed-capsule of another species, and caused it slowly to assume a position which it would not otherwise have acquired. I forget the name of the plant, and have vainly spent an hour in trying to find the passage, though I am sure I marked it. Will Mr. Beaton have the kindness to repeat the statement? and I am sure it is worth repetition. If he grant this favour, will he inform us whether his observations were made on several flowers, and during one or more years? I remember some difficulty in finding the name of the plant in such catalogues as I happened to have at hand, which led me to suppose that it had, like too many plants, more names than one.—CHARLES DARWIN.

[In answering Mr. Darwin's question, allow me, first, to clear myself of any participation in his opening remark, that "Few facts in vegetable physiology are more remarkable than the well-ascertained influence of the pollen of one species or variety on the seed and fruit of another species or variety while still attached to the female plant." Gärtner never proved that—he only asserted it; and when he was pushed to the proof, he lowered his sails, made a second edition of his great work, and confessed many of his errors.

The most practical cross-breeder who has yet appeared has stated "Gärtner's report of the cross-bred seed he has obtained, to be nothing but a mere enumeration of the crosses he has tried to obtain." And with regard to very many of the cases of impregnation mentioned by Gärtner, he, the said cross-breeder, otherwise Dr. Herbert, "utterly repudiates the probability of such impregnation;" and well he might.

It was not Gärtner, but Dr. Wiegman, in 1823, who first said he found the Pea changed colour from being planted along with *Vicia sativa*, or common Vetch; and Gärtner, two years subsequently, said he caused the same change by means of the pollen; and our Mr. Knight was somewhat smitten with that doctrine.

I had a commission to work over, again and again, every experiment mentioned by Gärtner, Wiegman, and Lageret, and I found over and over again each experiment was without a base. Others proved the same, but it remained for the late Professor Henslow to prove by scientific investigation that the pollen has no visible effect on the seed impregnated; and no cross-breeder of any practice in England at the present day would like to have his name associated with that of Gärtner, for or against any exploit in crossing. Nevertheless, I am firmly of the opinion that Gärtner was right in his belief of the way impregnation is effected.

I forget the plant I mentioned last year as having the peduncle, or stalk, of the flower affected by pollen. Of all the plants I recollect having mentioned, for the last twelve months, there are only five genera that are affected that way—*Corbularia* and *Hermione* among the *Narcissi*, and *Erodium*, *Pelargonium*, and *Geranium*, in that class of plants. The best generic distinction for upholding *Corbularia* and *Hermione* as distinct from the true *Narcissi*, is that the peduncle rises slowly from a horizontal to an upright posture as the seeds ripen in the pod. The *Erodiums* and a section of *Pelargoniums*, with, I believe, all the true *Geraniums*, have the peduncle affected differently from the great mass of *Pelargoniums*.

It is probable, however, that Mr. Darwin has been thinking of

what was said on the different stages of impregnation at page 330, of Vol. XXVII., the part for this time last year. And I think Gärtner's idea of how the pollen acts is proved both by the *Erodiums*, including *Pelargonium*, which is not a natural genus, and the true *Geraniums*, inasmuch as the footstalk of each flower in all that mass of species, and in their endless varieties, is the first part that is affected by the pollen. Indeed, I am quite certain of that, for I had at least ten thousand proofs of it. But let me explain.

Take any of the true species out of all the *Geraniaceæ*, cut off the stigma before the pollen can intrude, and the peduncle of that flower will retain its original or natural posture till it decays. A Tom Thumb, or any of the bedders, will prove that very shortly. Take another flower in the same truss, and cross it with the pollen of another species which you know will not cross with it, and the peduncle will turn to the opposite of its natural posture, and will never regain the true position, but die ultimately, as the process of fertilisation went no farther than to affect the footstalk. The next stage is the quickening of the pod, the next that of the lobes of the seeds, and all this may be, and yet no life be given to the embryo of the seeds.

Early next May any one may influence a hundred flowers of the Scarlet Defiance *Geranium* as far as the footstalk of its flowers, but no farther. Every flower of that one kind which is crossed by its own pollen, or by foreign pollen, will, in eight or ten hours, reverse the posture of the footstalks; but the seed-pod is not reached by the contents of the pollen, and the consequence is no seed and no rising of the peduncle. There are many seedlings which will prove the same as Defiance at the end of October, and through November.

Notwithstanding these facts, one can conceive a state of climate which would render the effect of that same pollen active through the three or four stages of impregnation, and produce fertile seed from Defiance. Indeed, the pollen of some kinds or varieties, which will only affect the footstalk very early and very late in the season, will effect a cross in the middle of July; and I have obtained, and I believe I am the only one who has done so, a real cross from Scarlet Defiance, which is over fifteen years old; but I may be mistaken. The case of *Cybister*, or "The Tumbler" *Nosegay Geranium*, is a different sport altogether, the truss comes naturally in a reversed position, and takes from three weeks to a month to make a right round change of position.—D. BEATON.]

THE GRAPE CONTEST.

ROYAL HORTICULTURAL SOCIETY'S FRUIT COMMITTEE.

A SPECIAL Meeting of the Fruit Committee of the Royal Horticultural Society was held on Wednesday last, to decide the challenge offered by Mr. W. Thomson, of Dalkeith, through the pages of the *Florist and Pomologist*, to Mr. Tillery, of Welbeck. Some discussion had taken place between these two eminent gardeners as to the relative merits of old and new Grapes, Mr. Thomson having succeeded in producing new Black Hamburgs on New Year's-day, and he held that new Grapes were preferable to old ones. Mr. Tillery advocated the merits of the old or *hang* Grapes against the new, and for some time an interesting and exciting discussion was kept up, one or two other members of the upper stratum joining in the discussion. As if to bring the subject to some tangible form, Mr. Thomson stated at page 70 of the volume of the *Florist and Pomologist* just completed, "If Mr. Tillery has no objection, and we are spared till the time, I will send newly-ripened Black Hamburgs to any of the January or February Meetings of the Fruit Committee of the Royal Horticultural Society, and he can send his best Black Grapes, for Hamburgs and Muscats could not well be compared in point of flavour, and let the Committee decide which are the best Grapes in point of flavour."

Accordingly, there being no regular meeting of the Fruit Committee in January, this special Meeting was appointed, which was numerously attended both by members and visitors to witness the result of the contest. Mr. Thomson sent three beautiful bunches of new Black Hamburgs which were ripe on Christmas-day. The bunches were of good size, well set, wide-shouldered, and shortly ovate. The berries large, and some of them quite hammered; but, though quite black, the colour as a whole was not so intense and even as in the bunch sent to us last year. This, we are told, has arisen from the dark, dull, and gloomy weather they had in Scotland during the whole of the

autumn, when the season was more unfavourable than any that has been experienced for some years. Nevertheless, the Grapes were so beautiful that the Committee decided first of all that in appearance they had the advantage over the bunches of Black Hamburg, of Black Tripoli, and of West's St. Peter's that were exhibited by Mr. Tillery. These, too, were as good of their kind as could be seen anywhere, but the shrivelled appearance which had begun to set in contrasted unfavourably with the plump fresh-looking new Hamburgs. Then came the question of all others, the most important in the decision—flavour; for it was on this point that the issue hung. After a very patient and very close comparison the decision was in favour of the old Black Hamburgs. Having begun to shrivel, and the juice being inspissated, the sugar was more concentrated than in the new. The question then arose as to the general merits of old and new in regard of appearance and general utility, and the decision was in favour of new Grapes. We confess to a leaning in that direction ourselves, for we think there cannot be a doubt but that fine, plump, and fresh Black Hamburgs, with their fresh, crisp, green, stalks, are more attractive, pleasing to the eye, and much more sightly at table than Black Hamburgs that are shrivelled, and from which the rigidity of the bunch and berry stalks has disappeared. Even in point of flavour the difference is so slight that it has to yield to the other qualifications. Altogether the discussion was a very interesting one, and no doubt the public will duly appreciate the opportunity that Mr. Thomson and Mr. Tillery have given them of coming to a decision on the subject.

In addition to those exhibited by Mr. Thomson, there was a small box containing several bunches of new Black Hamburgs from Mr. McKenzie, of Kemp Town, Brighton. These, though not so large either in bunch or berry as Mr. Thomson's, were as black as jet and covered with a dense bloom; a finer "blae" we never saw. But the climate of Brighton is a very different one from that of Dalkeith, and the amount of light in the one place during the winter months is very much greater than in the other, and hence the difference in colour. The flavour of the two was, however, very close; the very black berries of Mr. Thomson's being equally rich in flavour with Mr. McKenzie's.

Three magnificent bunches of Muscat of Alexandria were exhibited by Mr. Tillyard, gardener to John Kelk, Esq., of Stanmore Priory. So large and so beautiful were they that the Committee unanimously awarded Mr. Tillyard a certificate of commendation for meritorious cultivation.

Mr. Tillery also sent a splendid bunch of Trebbiano and some nice bunches of Muscat of Alexandria shrivelled nearly to raisins, which were very rich and sugary in flavour.

Mr. F. W. Pack, gardener to G. H. Vernon, Esq., Grove Hall, East Retford, sent a fine bunch of Black Barbarossa; and Mr. James Fowler, gardener to the Earl of Harewood, sent some very nice specimens of the Charlesworth Tokay, from which it is clear that this variety, if at all different from Muscat of Alexandria, is only a slight variation from it.

Mr. John Cox, of Redleaf, exhibited dishes of a seedling Pear which he has found to be very useful, from its ripening in succession from the beginning of December till now.

Mr. Francis, of Hertford, exhibited a seedling Apple, which, however, did not possess any merit to recommend it.

WALKS.

(Concluded from page 51.)

MATERIALS OCCASIONALLY USED FOR WALKS.—I have seen many miles of excellent walks made of small coals, and nothing forms a more compact one. It is also sufficiently porous to allow the water to pass through, and it is infinitely superior to chalk, which, however, ought not to be used alone. Mortar rubbish has been already spoken of, and the waste of quarries of different kinds, some excellent materials being often found on the top of sandstone. Sand itself mixed with a harder material is not unfrequently used; and where it is sharp and gritty, and of a suitable colour, it makes a good walk for many private places where there are no wheeled carriages and not very many foot passengers. Burnt earths of various kinds are not so good, they get dirty and cling to the feet; but the fact of a new walk being dirty after the first rain is not enough to condemn it, for the after rains will wash many of the earthy particles to the bottom, leaving at top the sharp and gritty portions, which are clean and do not cling to the feet. This remark, I may observe, holds good with all walks, excepting those, perhaps, that are

coated with newly-washed material, as sea and river gravel, and such like.

FOUNDATION FOR A WALK.—Whatever may be the surfacing material, it often happens that it is not in sufficient abundance to allow the whole depth required to make a walk firm and dry to be all made of one kind: consequently, a common article is used in the bottom, and not unfrequently the bottom of a walk becomes a useful receptacle for many things that are unfit for anywhere else—broken crockery, glass bottles, clinkers, brickbats, stone, and mortar rubbish, &c., that are useless elsewhere. Clinkers and mortar rubbish, or brickbats with mortar adhering to them, are about the best bottoming for a walk, being so distasteful to worms, while they allow the drainage to pass freely through. I cannot say I admire chalk so much, although it is often used. Mixed, however, with other things it will be useful; but the materials of the locality will, in general, determine this matter.

BOTTOM OF FOUNDATION.—Unimportant as this may seem to many, I am convinced there is no point in walk-making of so much consequence in some places; I, therefore, make no apology for placing the subject in its proper light, which is best done by detailing the practice I have adopted.

Being entrusted with the formation of a carriage road and large court entrance, which, as is often the case, was on the dampest side of the house, and the subsoil as stiff and impenetrable a clay as could well be supposed, I did not excavate and remove so much of it as many might have done, but carefully removed a part, leaving the bottom in a sort of ridge-and-furrow plan. The furrows were about 6 feet apart, and the inclination from the ridge 2 or 3 inches, the ridge itself not being more than 4 inches from what was intended to be the surface of the road; so that only 4 inches of metal were wanted on that part, while on the furrow it was 6 or 7 inches, and in the furrow itself a clean-cut drain was made, in which ordinary two-inch drain-pipes were placed. These were not deep, excepting at one end, to which it was necessary to convey the water. There the tops of the pipes might be a foot deep, perhaps, while at the other end they were close to the surface of the furrow. The ridges were pared smooth and true to shape, and all the material carted away, including that from the drains; and the whole was covered over with stones larger than ordinary road stones, the drains being filled with the same. Care was taken not to disturb the incline of ridge-and-furrow system into which the whole was cut; no carting over it was allowed until it was covered with stone. A finer description of stone followed, and finally the top-dressing, and the whole acted very satisfactorily. The water which fell on the top, or what might be conveyed thither, for the place was low, passed quickly through the stratum of the road, and the inclination of the smooth clayey foundation carried it into the furrows, whence it was conveyed away by the drains, which all united at their lower end. A walk may be formed on the same principle, the foundation declining to the centre, along which there might be a drain as described above; or, if the walk be wide, there might be two drains, as I have on more than one occasion made. This precaution, however, is only necessary on those tenacious clays which retain all the water that falls on them. When the ground is of a contrary description this plan of preparing the foundation surface is not necessary, and for walks a less depth of material will do. The only difficulty to guard against in shallow work is worms finding their way through and disfiguring the walk. As a preventive, therefore, use mortar and lime rubbish, cinder or clinker rubbish of any kinds noxious to worms, and, in default of all these use stone or chalk more abundantly; bearing in mind at all times that, although a smooth and level surface is wanted in walks at all times, they ought nevertheless to be porous, and by no means ought water to stand long on the surface of a walk, neither ought it to remain below, or it will always be damp, and moss and dirt will be engendered.

CONCLUDING REMARKS.—The ordinary routine of frequently rolling walks is so often alluded to in the weekly instructions given in this Journal as not to require any further notice here. Walks, however, require to be broken-up betimes, in order to destroy the moss or discoloration that comes on their surface; this is best done in winter, the surface gravel only being broken-up with a pickaxe, or, it may be, a strong fork. This brings some fresh gravel to the top, and, being carefully levelled, it again forms as good a walk as ever. A much more difficult matter is to keep the weeds down. Handweeding is strongly advocated by many in preference to salt, as the latter undoubtedly en-

courages damp more or less; but where there are large breadths to do, I confess not knowing anything so expeditious. On this subject, however, I expect some one will give us an article at some early time, detailing the results of a chemical substance cheap, efficacious, and not causing the damp complained of in salt. In Devonshire and Cornwall I have seen a substance like green sand that is found in the mines, spread over a paved yard to kill the weeds, and it effectually did so. I think it partook largely of copperas, or some mineral poison of a like kind. I have also seen a refuse of arsenic used in a similar way; the latter however is, perhaps, as objectionable as salt. I would, therefore, invite others to give us their experience in this matter; and as the subject of walks has extended to greater length than I intended, that on roads must be deferred till another time.

J. ROBSON.

GRAPE-GROWING IN AMERICA.

I FIND, by a perusal of THE JOURNAL OF HORTICULTURE, that considerable attention has of late been paid in Britain to some of the phases of Grape-growing, and some valuable opinions have been elicited concerning the different points of merit to be considered in judging a bunch or dish of Grapes produced at an exhibition, from all which I trust some world-wide standard of excellence will be erected, contributing to assist judges in impartial decisions and to the satisfaction of exhibitors.

As I have derived much valuable information from these pages, I make bold to submit to your readers two experiments I have made lately with the Grape Vine, always bearing in mind the difference of climate, soil, &c., between Britain and America.

In March of last year I renewed the outside border of an established house of Grapes here, cutting-off all the roots right up to within 2 feet of the Vines, which are planted inside, but derive very little support from the inside border. I raised the bottom of the outside border 18 inches, and cut a fine crop of Grapes from the Vines in August and September last. The leaves flagged a little during some of our scorching days in May; but by attending closely to ventilation and keeping up an abundant supply of moisture in the house I escaped without a scorched leaf.

This I had precedent for, having seen Mr. Fleming do the same when under him at Trentham, but with this difference—Mr. Fleming renewed his border before the Vines were quite rested in the autumn, thus giving the roots a hold during winter ready for a start in spring; the better way no doubt, but as I only took charge here in the preceding October I was prevented from strictly adhering to precedent.

Being much encouraged by success in this instance, I determined to try if I could not also produce new Grapes on New Year's-day; so, having cleared one house of Grapes in the third week of June, I pruned and started it in the first week of July, the temperature at the time often ranging up to 98° or 100° in the shade. The Vines bled very little, and broke very regularly. There were thirteen rods of Black Hamburgh and two rods of Muscat of Alexandria in the house. I soon found there would be no difficulty in ripening them by the time specified, as our fine genial fall, or Indian summer, brought them along very rapidly, and as the cold weather set in I, of course, took care to place ample protection on the outside border; for by the middle of December we had the thermometer down nearly to zero.

The Hamburgs bore a very fair crop, and are now (New Year's-day) quite plump in the berry, and as black as sloes, the leaves being as green and fresh as they were three months ago. I have furnished both Hamburgs and Muscats for Mr. Hoyt's table to-day, this being the grand reception-day in New York.

Strange to say in this dry climate mildew is a great pest to Vines, and has to be very carefully guarded against. I find strewing a little fresh guano occasionally in the house to be a good preventive.—DAVID FOULIS, *Gardener to Edwin Hoyt, Esq., Astoria, Long Island, New York.*

A FEW DAYS IN IRELAND.

WOODSTOCK.

THIS charming, romantic, and richly picturesque demesne of the Right Hon. W. F. Tighe and the Lady Louisa Tighe, is situated about ninety miles from Dublin, seven miles from Thomastown station on the Waterford and Kilkenny Railway, and close to the pretty village of Innistioge. In the days before-

the union, Innistioige sent two members to parliament. It was deemed of so much importance as to be besieged by the soldiers of Cromwell, and it possesses now the Ivy-clothed massive ruins of an old castle, or, rather, cathedral, which is said to have been built nearly nine hundred years ago. Close to these ruins, reminding one so forcibly of ancient times, the Catholic and Protestant places of worship stand lovingly side by side. It is no part of our duty to refer to the religious differences which have exerted such a baneful influence upon Ireland; it was a much more pleasant thing to be delighted with proofs that the largehearted kindness of Christianity was undermining and rooting-up the narrow-minded acerbities of sectarianism. Only bring men, honestly holding different opinions, into friendly contact, and it is amazing how soon they will respectively find much to admire in each other. We know little of the good people of Innistioige; but in noticing their clean and tidy homesteads, and their apparent friendliness with each other, we could not help thinking that these appearances might be somewhat owing to Catholics and Protestants worshipping the same Creator within such a short distance of each other. We can hardly imagine that, in such circumstances, pastors and people could do otherwise than exchange the courtesies of Christian charity.

Such impressions, if existing, would be deepened by the magnificent and beautiful surroundings. Nestled at the base of a hill, the village is almost washed by what Spencer styled the "grey waters of the stubborn Nore" (Nore), passing along so languidly, unless when in flood, as somewhat to resemble a rippled lake. The river here is crossed by a fine level stone bridge of ten arches; and the whole of these arches and buttresses, &c., are so draped as at once to arrest attention, fringed, as they are, with *Polypodium vulgare* and other Ferns, wreathed with Ivy and Woodbine, and dressed-out with masses of red Valerian. Above the bridge, on the opposite side of the river, the land extends in rich pasture and arable fields; below the bridge, the banks become more lofty and are clothed with timber. On the village side the banks rise precipitously from 100 to 200 feet in height, and are densely clothed with trees, with long streamers and garlands of Ivy flaunting in the richest luxuriance. Two islands are here situated in the river, also clothed with trees, the branches kissing the water, and, in their dark richness of foliage, contrasting charmingly with a row of white Poplars on the farther bank, whilst the flowing of the stream imparts a life-like reality to the whole. A turn of the river takes it now out of our sight. A gate at the village, however, admits to a fine carriage drive, between the margin of the Nore and that picturesque bank going on to the Red House, nearly two miles distant, the House and the drive being alike open to visitors.

A very steep ascent leads from the village to the entrance-gates—so steep, indeed, that Col. Tighe generally sends horses to meet the carriages of his friends. A walk almost equally steep winds to the top of the bank referred to, continuing as beautiful shaded pathways along its crest; and, on looking back whilst mounting the hill, the bridge, the river, its islands, and its banks, present numberless points of interest fascinating to the lover of beautiful combinations, and on which the eye of the painter would delight to linger.

Inside the park gates, the approach, nicely kept, winds amid lawn and park scenery, backed by lofty masses of diversified sylvan beauty. As groups in the park here, what we remember most vividly were numbers of fine-headed Hornbeam, &c., with large, natural-swellings mounds of roots, forming massive pedestals to the straight-columned boles, furnishing a fine lesson alike of elegance and fitness to those who place a beautiful vase with a handsome pedestal in their garden, and then consider it necessary to enhance the uniqueness of the colour by concealing its base with a mound of flowers! Groups of Scotch Firs, becoming bonnet-headed from age, lent their charms to the picture. The approach declines considerably to the entrance front, and thus lessens the architectural dignity of that side of the mansion; but this disadvantage is greatly neutralised by a broad level platform there, standing on which you think nothing of the descent by the approach.

With the above drawback, if drawback there be, no sooner do we arrive at the garden front, which faces the south-east, than we see at once in what a favourable and commanding position the mansion is placed. The lawn and park already referred to gradually merge into the beautifully wooded hill of Mount Alto, which rises 1400 feet above the level of the sea, and thus secures

not only warmth and protection, but forms a splendid background to one of the most beautiful and diversified of landscape pictures. On the east side of the new balustraded gardens a large space was being cleared for a new bowling-green, bounded by a miniature winding lake, with Hydrangeas, pink and blue, and giant Ferns drooping over its waters, and these backed again by trees which join those on the crest of the bank, which here conceals all traces of the river. Bringing the eye southwards, owing partly to the falling nature of the ground it passes over a wide piece of open lawn and a spacious glade, and taking in a long reach of the river, rests on the old Castle of Cluen and the steep wooded banks on the opposite side of the stream, until extending your range it takes in a great extent of beautiful elevated country, dotted with cottages and farms, terminating in the distant mountains of Wexford. On going more westward, another glade, but for its dying-out, would carry the eye to the point where the water of the glen joins the river near the Red House, which is a mile distant from the mansion. Between that glade and a third is a lake of water in the foreground, which is so managed that though of small size you might imagine it extended to great dimensions in the masses of wood; whilst the diversified foliage of the Pine, the Oak, and the Maple, &c., as reflected from its silver waters was very striking and pleasing. A great advantage of such glades besides opening-up the scenery is, that they present much of the charms of an avenue without any counterbalancing stiffness. Further westward, and in a straight diagonal line from the drawing-room windows, is the *Araucaria-avenue* backed on each side by masses of timber. Westward of this new front garden and north-eastward of the *Araucaria-avenue*, are clustered what are most interesting in a gardening point of view at Woodstock.

A very imperfect examination of what had been done and was doing sufficed to convince us of two facts:—First, that the worthy proprietors of the demesne have a refined taste for the rare and the beautiful, and liberally supported the means of gratifying that taste; and, secondly, that in the designing and carrying-out the improvements that will make Woodstock every year more interesting, they had been more than fortunate in securing the services of a gardener who possesses the enthusiasm of a poet, the eye of a painter, and the genius of the artist, united to a practical acquaintance with the principles of architecture, as well as those having relation to the different departments of horticulture and landscape-gardening. Seldom, indeed, do we find such a variety of work accomplished by one man and all done in first-rate style; and that, too, almost wholly, if not entirely, with the help of the working men in the neighbourhood. Though we cannot reach, we may well honour such talents, and more especially as Mr. McDonald is another striking instance of what can be accomplished by earnest self-denial and unremitting self-culture.

The mansion is a large, spacious, comfortable building; but until its exterior was improved it was plain rather than elegant. A portion was still covered with lime harling, which is more attractive at a distance than close at hand, and would never have done in juxtaposition with the fine balustraded garden in front. The massiveness of the walls of that garden, and the light elegant granite appearance of the mansion now, are greatly owing to the various treasures found in Mount Alto. We have already alluded to the beauty of that lofty wooded hill, planted about forty years ago by Colonel Tighe. Beautiful as it is externally, it is just as singular in its geological formations, which have been turned to good account in the new works. From this come the fine granite, and the remarkable gravels of which we shall have more to say. From the bed of the river to the top of the mountain is chiefly the clay slate formation, along with schist and quartz rock; and at the sky line is seen the argillaceous schist in contact with the granite. At this line there are a hitch and evidences of volcanic eruption, as may be readily observed by the masses of granite at this elevation so isolated and thrown out on the outside of the spur. The granite is of the finest quality. We saw large steps of it in one slab, 15 feet long and 18 inches broad; a much larger piece still was polished as a garden-seat. It is different from Wicklow granite, and some of it contains hornblende. In one part is a peculiar kind, the felspar of the deepest red colour, and in another part it is of a pearly white. Both of these are used as gravels. The white has also been largely used by Mr. McDonald for mixing with Portland cement, to imitate building with granite. It is thus that he had nearly finished giving to the mansion the appearance of a noble structure of stone. The hit, or the discovery of

mixing these materials so as to resemble blocks of granite, was a happy one, and we have little doubt will be very satisfactory. Mr. McDonald, who is well acquainted with the geology of Ireland, was agreeably surprised to find such granite close at hand, as it is chiefly confined to the coast line.

The new balustraded garden in front of the mansion is 350 feet in length and 250 feet in breadth. The boundary granite wall, parallel with the mansion, shows a height of about 8½ feet outside, facing the open lawn already referred to; at the lower end 4 feet is hidden, which would give 12 feet if all were shown. The lower courses consist of bold rock faces, and the upper courses of dressed ashlar, showing joints of 1½ inch. The height of this wall, as seen inside, is 2 feet, and it is covered by an elegant coping of original design 2 feet in width. On this, granite pedestals with neat plinths are placed at 30 feet distance from each other. These panelled blocks are 2 feet square and 3 feet in height, with a neat cornice round, projecting 6 inches. On these pedestals handsome tazzas will be placed suited to the size of the pedestals. On the end pedestals are fine granite balls, beautifully worked and of elegant design.

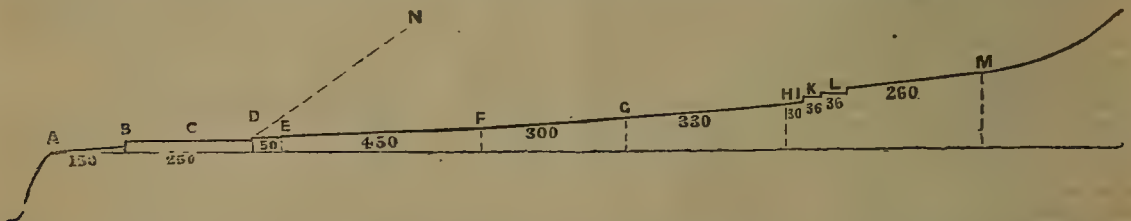
The wall supporting the lower side of the terrace—that next the bowling-green on the east side—is 12 feet in height outside, built also of granite, with handsome buttresses, panelled, and showing three water tables, and standing 35 feet apart. This wall is dressed ashlar with plain joints, the base course 18 inches deep; all above 12 inches. A moulded string course projects 4 inches, and on this rests a beautiful coping of original design 18 inches deep, in lengths of from 4 to 6 feet, which forms the parapet inside, and projects 3 inches over the string course. The whole of these walls testify to the best workmanship and the most refined taste.

We now step inside again. We know nothing of the previous arrangements close to the house. A low wall now separates this garden from the lower business and living rooms of the servants, so that they also may see its beauties. On this wall vases were to be placed, and a border for flowers was to be made in front, on each side of the grand iron staircase. This staircase, connecting the drawing-room with the new garden, is in the centre of the main building and the centre of the garden; it is 14 feet wide, and composed of thirteen steps, tread of steps 18 inches. These steps rest on four beams, which spring out from the house and repose on massive granite blocks 23 feet from the wall. A fine granite slab covers the ends of the blocks, and forms the first step. To conceal the iron beams at each side, there is a handsome moulded iron skirting fully 2 feet in depth, which rests at

the bottom on tables of granite finely dressed and moulded, on which Warwick vases were to be placed. This stair is of the most elegant and newest design, and was made by Mr. Turner, of Dublin, whose refined taste is well known and appreciated.

We had the pleasure of seeing the main features of this garden approaching completion, men being actively engaged in levelling the sunk panels. Besides the walk all round, the space is divided into four equal parts by a broad longitudinal walk, crossed by a transverse one; the first being opposite the grand staircase. These walks were beautifully made, verges of turf as level as a table, sloping bank, and the rest level before coming to the earth in the panel, all equally true and exact. These four panels will be 2 feet below the level of the surrounding walks. How these are to be laid out, if not already done, we cannot tell. We do not think that Mr. McDonald and Lady Louisa Tighe had then quite decided on the matter. We gathered much, that it was to be different from what generally obtains. Besides the flowers in the two borders near the house, and the tazzas and vases, mere brilliancy of colour was not to be attempted. Being directly in front of the principal rooms, it was very desirable that the garden should be as attractive in winter as in summer, and, therefore, its interest would chiefly depend on the artistic nature of the designs, and the use of dwarf plants, permanent in their character, and more distinguished for their foliage than their flowers. Such a plan would be especially desirable at Woodstock; for, as we shall see presently, there is plenty of room for floral display elsewhere. Mr. McDonald jocosely told us we must see the panels of that garden when they were finished; but if that second visit should not take place shortly, we feel confident he will kindly satisfy our anxiety, and that of others on this subject, as soon as he shall have pleased and satisfied himself. Such a system of parterres could never be tried under better auspices, and a deliverance on the subject under such circumstances would be especially interesting and important.

Not to speak of the massive walls of this garden, nearly 14,000 cubic yards of earth were brought to form the terraces, chiefly from behind the Araucaria-avenue. The excavation thus made will be devoted to a sunk drive, and recesses for ferneries and aquatic plants. The whole was moved by the hardy pony-looking horses. Owing to the suitability of the ground, this work could have been done, Mr. McDonald told us, for £200 less money by rails and waggons, but Lady Louisa decidedly preferred giving the money to the small tenants for cart-work. Need we wonder that such considerate proprietors should live in the affections of their humbler neighbours?



After some consideration as to the best mode of finishing our meagre outline, we have come to the resolution to sacrifice succinctness to variety; and will, therefore, take the accompanying rough sectional surface line of Woodstock as the key-note of our observations. Beyond A is the romantic and picturesque bank to which we have previously alluded. From A to B is the ground of the new bowling-green. At the wall at B a fine double staircase was being built, which is now finished. From B to M may be considered as a line in the centre of a gravel walk, running from the S.E. to the N.W., there being only a turn at E. From B to D is the transverse line through the width of the new panelled balustraded garden. At D is a sloping bank, and eight granite steps 15 feet long, the same width as the walk here. At E is another slope, and a rise of three steps, and 50 feet of a fine sloping lawn on each side of the walk. From E to F the broad walk is continued 450 feet. At F is a noble Beech, and beneath its shade is placed a splendid block of granite as a seat. From this the walk turns to the right to bring it in a straight line with the centre of a walled garden at G. From F to G is 300 feet. The garden is a square of 330 feet. Beyond are three terraces, I, K, L, with sloping banks, and six steps in the walk between each of them. From the upper rise at L the walk goes on to M, with a line of Irish Yews on

each side. At M is the boundary of shrubs and trees, and beyond, the line would be continued through the deer park, until it merged in the wooded hill of Mount Alto. From these massive granite steps at D, placed in the middle of the new garden longitudinally, a fine view is obtained of the Araucaria-avenue, extending diagonally as in the dotted line N. We shall leave the avenue at present, with stating that improvements were in progress for connecting it more efficiently with the new garden. Close to this place were two fine healthy specimens of *Cupressus macrocarpa* 30 feet in height, and an *Abies morinda* 25 feet in height, that were transplanted in May 1860, and no machinery used except the living machinery of Irish labourers. The sides of this main walk, from D to G, were chiefly open lawn, with such turf as is seldom seen out of Ireland, studded chiefly with single specimens, backed by irregular masses of evergreens and deciduous trees. The rain descended in torrents during the previous night; but though that walk was on such an incline, so well had it been made that there was not a wrinkle or a bit of surface gravel washed out of its place. As yet we have seen no glass, but in passing along from F to G we observe a lean-to greenhouse in front of the shrubbery, far off on the right hand, and looking somewhat lonely in its solitude.

We were rather surprised to find, amid such surroundings, a walled-in garden 330 feet square. It had previously been used for vegetables and fruit, but is now to be rightly and exclusively devoted to the latter, with the exception of flower-borders by the sides of the walks. A new kitchen garden is one of the wants of Woodstock, as the old one between the house and the river seems worn-out, and overstocked with large fruit trees. But about this walled garden. We should not like it to be removed, were it only for the position the walls afford for creepers and half-hardy plants. These walls are 14 feet in height. From the rising nature of the ground the south side rises in ramps of 2 feet, with a vase and pedestal on each rise, which give a good effect. It just struck us that the somewhat heavy effect would be much lessened if the south wall were lowered some 5 or 6 feet, ramped as now, and the east and west walls ramped to meet it, and also ornamented with vases on the rises. That ramping might be confined to the half from this central walk.

The lawn is open on the south side with a few beds of flowers in which the Prince's Feather and Love-lies-bleeding are not forgotten. The walls, especially their best aspects, were densely clothed with fine plants of Jasmines, Magnolias, Wistarias, Solanums, Smilaxes, Passifloras, Myrtles, Spireas, Escallonias, Edwardsias, Ceanothus, &c., and many unnamed things, some of good promise, sent home to Lady Louisa from friends in India and Australia. The entrances to this garden at E and G, and also in the centre of the south wall opposite a transverse walk, are by rich iron gates of an azure blue and gold colour. The sides of the walks are roughly ribboned with flowers, and rows on the sides of the transverse walk of the *Anemone japonica* were very striking, the masses of flowers being nearly a yard in width.

Against the north wall of this garden, are five lean-to fruit-

houses devoted to Vines and Peaches. The wood of the latter was in excellent order, and the same might be said of the Vines. In one house were some excellent late Grapes in September, and looking as if they would keep good for some time. The wood was also firm, strong, and short-jointed. The treatment of these Vines is one of the most singular of which we ever heard. Mr. McDonald stated that three years before they were in a bad state, all was done to coax them by surfacings, &c., and though the leaves became better, no young wood of any size would come, and from examining the roots he had little hopes of their being easily improved. There was no opportunity for a large job being done, so about the new year he set to work with a saw, and cut clean over every Vine, about 6 inches below the surface. The old roots were grubbed-up, and only a small bit of border made. Of course, every attention was paid to these old Vine-stems, and the movements of the sap watched most attentively, until the white fat spongioles were running out by the foot. The result in the autumn, as specified above, was not only good fruit, but fine healthy wood. One great advantage from such a cutting-down mode is, that like the roots from a bad cutting, the roots would all come from a common centre—a matter of more importance than is generally imagined; Mr. McDonald having proved over and over again, that two or three sets of roots will never produce fine, regular, well-coloured Grapes—a fact which should be considered by those who think they increase strength by laying the stems of their Vines in a house. We suppose we must have looked a little incredulous about this sawing-over of Vines, for we were desired to examine the cut stems, which we did, and saw the strong fresh roots issuing from above the cut part. This beats all our root-lifting hollow; but, then, we fear, it would require the attendance of a McDonald to make it answer so well and so early.

R. FISH.

(To be continued.)

RHODODENDRON JASMINIFLORUM (JASMINE-FLOWERED RHODODENDRON).

Nat. ord., Ericaceæ. *Lin.*, Decandria Monogynia. At the first exhibition of flowers at the Chiswick Gardens of the year 1850, few plants excited greater attention among the visitors most distinguished for taste and judgment, than the one here figured, from the nursery of Messrs. Veitch, of Exeter. Many excelled it in splendour; but the delicacy of form and colour of the flowers (white with a deep pink eye), and probably their resemblance to the favourite Jasmine (some compared them to the equally favourite *Stephanotis*), attracted general notice. A remarkable character of its flowers is the great length and straightness of the tube. It is a native of Mount Ophir, Malacca; elevation 5000 feet; having been there discovered by Mr. Thos. Lobb, and transmitted to the nursery of Messrs. Veitch. It seems a ready flowerer. The specimen here figured was drawn in September of 1849, and still finer flowering plants were shown at the May Exhibition at Chiswick, in 1850.

Description.—A small shrub, as reared by Messrs. Veitch,

1½ foot high, the branches bare of leaves below, and knotted where they had been inserted. Leaves crowded towards the upper part of the branches, lowermost ones subverticillate, on short petioles, obovato-oblong, rather acute, glabrous, nearly coriaceous. Umbel terminal, many-flowered. Peduncles one-flowered, short, with small reddish bractæ at the base, and, as well as the very small, shallow, obscurely five-lobed calyx, lepidote. Corolla salver-shaped, white, slightly tinged with rose below the limb; the tube 2 inches long, straight, scarcely gibbous at the base: the limb spreading, of five obovate wavy lobes, almost exactly equal. Stamens ten. Filaments filiform, downy, as long as the tube. Anthers red (forming a red eye, as seen at the mouth of the white corolla). Ovary oblong-cylindrical, lepidote, 5-celled, glandular at the base. Style rather shorter than the stamens, filiform, downy. Stigma dilated, obtuse, green. It is a warm greenhouse shrub, and its flowers are fragrant.—(*Botanical Magazine*.)



Rhododendron jasminiflorum.

THE GOOD-GRACIOUS PANSY.

I RECEIVED my share of the remonstrance against this name from Mr. P. H. Gosse in the spirit in which he gives it, and thank him for it. It is true I did not invent the name as he admits; and I trust he will believe me when I say, it is equally true that if I had thought it an "unseemly name," I should never have used it; but I never did think so, nor do I now. If there were no "essential difference" between Good Gracious and "Good God," should we say "Most Gracious Majesty?" or "Her Majesty graciously condescended to accept a nosegay of the Good-Gracious Pansy from her Grace the Duchess of Sutherland?"

The same objection was raised when the "Good-Gracious Polyanthus" came out, by the lady who owned the Experimental Garden, and who was sister-in-law to the late Bishop Blomfield. The question was referred to his lordship, and his very words were, "Cardinal Beaton is right;" therefore I would not repudiate this name.—D. BEATON.

HUYSHÉ'S VICTORIA PEAR.

THEE is, perhaps, no fruit so capricious in its periods of ripening as the Pear. The above sort, for the most part, ripens before Huyshé's Bergamot; but this season it is keeping longer than it. Mr. Huyshé writes me, that he has two or three hundred specimens that are likely to keep well for three weeks to come. What is still more remarkable, it is far superior in quality to the Bergamot, which has hitherto been considered the better Pear of the two. It may, indeed, be considered one of the most delicious Pears known.

I ate part of one to-day, January 15, and compared it with Joséphine de Malines (some of which have ripened prematurely), a standard of excellence, and was interested in the variation of their flavour, yet both delicious. The Victoria, with the melting flesh and abundant juice of the Marie Louise, has a delicious perfume, recalling that of Gansel's Bergamot. The Joséphine de Malines, alike melting and juicy, has a flavour quite peculiar to itself and equally gratifying.

It would seem, from what I learn from the reverend gentleman who raised the Victoria and the Bergamot, that the latter, this season, has been fine only from a south wall, so that it probably requires a warm season to bring out its qualities.

The Victoria is hardier and "is always good," so that it may be planted as a pyramid in any of our counties favourable to Pear-culture. This very valuable Pear is likely to supersede many of our winter varieties—such as Glou Morceau, Beurré Diel, and others, not only because the tree is hardier, but from its flavour being, like the Prince of Wales Pear (a new kind raised by Mr. Huyshé, and recently reported on by him), quite "exquisite."

Many Pears have ripened here prematurely this season. Winter Nelis, Glou Morceau, Beurré Diel, and some others ripened early in November, and were not up to their usual quality.

Mr. Scott does not give a true description, page 29, of the Easter Bergamot, or Bergamotte de Pâques. This sort keeps till April, and is always crisp, poor, and worthless.

The Doyenné Goubault is also a crisp Pear, seldom or never becoming soft, and keeping till June. This is, by some mistake, wrongly described in the "Manual," and in one or two French catalogues. The Pear is large and nearly round, like its congener, Bezi Goubault, and, like that, it will keep plump and sound till Pears come again, and may then be thrown away.—T. R.

[A short time ago we were favoured with a small basket of fruit of Huyshé's Victoria by Messrs. Lucumbe, Pince & Co., of Exeter, to whom Mr. Huyshé presented the stock of this valuable variety. In regard of flavour, we never tasted anything more rich or delicious in a Pear; and we can quite confirm the statement of "T. R." when he says, "It may be considered one of the most delicious Pears known."—EDS. J. OF H.]

FORMING A ROOKERY.

YOUR correspondent of last month will find on taking an old rook's nest from an existing rookery, and tying it securely and neatly to the top of one of his own trees, that, probably, during the next building season, others will be added to it.

I have heard that an old broom tied securely in a similar manner will attract rooks. A nest to each, or every other tree if many, as convenient, would be advisable, as I take it the knowing ones prefer an inhabited spot to solitude. It is necessary that the trees should be high and otherwise to their taste—Elm or Beech are preferred.—EDWARD NORTH.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

SONERILA GRANDIFLORA (Large-flowered Sonerila).—*Nat. ord.*, Melastomaceæ. *Linn.*, Triandria Monogynia.—Native of the Nilgherry Mountains. Introduced by Messrs. Low & Son, Clapton Nursery. Flowers in October. Colour deep purplish-crimson.—(*Botanical Magazine*, t. 5354.)

TRICYRTIS HIRTA (Hairy, or Thunberg's Tricyrtis).—*Nat. ord.*, Uvulariæ. *Linn.*, Hexandria Trigynia.—It has also been called *Uvularia hirta*. Mr. Fortune found it in Japan. It flowered in November at Mr. Standish's, Bagshot Nursery. Flowers pearly white dotted with purple.—(*Ibid.*, t. 5355.)

PITCAIRNIA PUNGENS (Spinose Pitcairnia).—*Nat. ord.*, Bromeliaceæ. *Linn.*, Hexandria Monogynia.—Native of the Andes in New Granada. Flowers, or, rather, perianths, orange red. "A very handsome greenhouse plant."—(*Ibid.*, t. 5356.)

CORYSANTHUS LIMBATA (White-edged Corysanthes).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—"This perfect gem" was introduced from Java by Mr. W. Bull, Nursery, King's Road, Chelsea. Flowers in October. "Decidedly the most exquisite little plant of its size, 4 inches high, that ever came under our notice." Stem transparent, its solitary leaf vividly green and white-veined; petals rich purple edged with white.—(*Ibid.*, t. 5357.)

SEDUM SIEBOLDII (Siebold's Sedum).—A Stonecrop from Japan. Introduced by Messrs. Henderson, Pine Apple Place. Leaves glaucous, tinged with purple. Flowers purplish-rose.—(*Ibid.*, t. 5358.)

DAMMARA ORIENTALIS (Dammara, or Amboyna Pitch-Pine).—*Nat. ord.*, Conifere. *Linn.*, Dioecia Polyandria.—Native of Moluccas. "Perhaps the rarest of all the Conifers cultivated in Europe."—(*Ibid.*, t. 5359.)

TROPEOLUM BALL OF FIRE.—Raised by Mr. Harman, of Uxbridge. Profuse bloomer. Flowers intense scarlet.—(*Floral Magazine*, pl. 129.)

PANSIES.—Raised by Mr. W. Dean, Bradford Nursery, Shipley. *Impératrice Eugénie*, white, margined with bluish-purple. *Harlequin*, yellow, singularly marked with purple. *Admiration*, and *King of Italy*.—(*Ibid.*, pl. 130.)

VARIEGATED SOLANUM (*Solanum capsicastrum*).—Introduced by Messrs. E. G. Henderson & Co., St. John's Wood. Leaves almost entirely pale yellow.—(*Ibid.*, pl. 131.)

CHRYSANthemUMS, LARGE-FLOWERED.—Two beautiful incurved flowers. *Her Majesty*, outer petals pale pink, inner petals silvery white. *Lord Palmerston*, dark rosy petals, silvery tipped. Raised by Mr. Salter, Versailles Nursery, Hammer-smith.—(*Ibid.*, pl. 132.)

ROSE ANDRÉ LEROY D'ANGERS.—A seedling from *Général Jacqueminot*. Raised by M. Victor Trouillard, of Angers. Introduced by Mr. Standish, Bagshot. Flowers large, cupped, very rich deep velvety purple crimson.—(*Florist and Pomologist*, No. 13.)

PLUM GOLDEN ESPEREN.—Called also *Drup d'Or d'Esperen*. Raised by Major Esperen, of Malines. First-rate dessert fruit; oval, golden colour, juicy, richly-flavoured, parts readily from the stone.—(*Ibid.*)

METEOROLOGY OF 1862.

SOMERSET.

I HAVE no doubt you have many readers who feel much pleasure in recurring to the thoughts and feelings as well as the deeds of a year gone by, and who find it refreshing to be able to fall back upon the daily remarks made in their journal for the purpose of comparing notes with other individuals at a distance, or to observe the changes made and their results on the scene of their labours. How easy to retrace our steps through the thicket or the jungle after leaving substantial landmarks on our journey through! And every one that makes his daily memoranda is fixing landmarks that will not only point

out the way he has travelled, but will materially assist him on his journey onwards.

The following remarks bearing upon the objects of THE JOURNAL OF HORTICULTURE are a few of the landmarks just as they were made in each passing month for a local purpose, and are an abbreviated copy of my journal.

JANUARY.—The new year came in dull, calm, and quiet, just as the old year passed away. On the whole, the temperature has been rather mild for the season, with a greater quantity of rain and more rainy days than generally occur when the weather in this month is considered reasonable.

FEBRUARY came in mild, and continued so up to the 6th; then frosty more or less to the 17th; to the 24th mild with misty rain; afterwards slight frosts and fine weather for commencing gardening operations. The land is healthier now than it has been for some time. A very small amount of rain has fallen during the month.

MARCH.—The first five days were cold and wintry, and rain and snow have fallen to a considerable extent throughout, with cold winds prevailing, and little or no sunshine in most places. The grass land is tolerably healthy, and with a moderately fine time in April grass will not be late; but the arable land is sodden, and, except on light lands nothing can be done towards sowing or planting with any advantage. The rain has been in an excess here of 90 per cent.

APRIL.—The month of April, considered in its seasonable character, may be said to have been favourable. Although the temperature has not been so high as in previous years, yet the nights have been warm; and the latter half of the month being free from frost with a fair amount of sunshine, great progress has been made in agriculture and gardening, and a rapid advance made in vegetation, so that the trees and hedges are clothed as if by magic, and all nature looks in a highly prosperous and smiling condition.

MAY.—The natural scenery of May is perhaps gayer and more lovely than that of any other month during the year. The botanist or the mere lover of flowers or natural scenery can make it the text-month of the year. Not a day dawns but it brings forth changes delightful to the lover of a ramble through the woods and lanes of the neighbourhood. Not a step can he take but new music bursts forth upon his ear, so that a companion is often distasteful.

Owing chiefly to the maturing character of the weather during October of last year, every spray of that summer's growth was filled with blossom-buds, so that the arboriculturists of other lands, that have been attracted through the International Exhibition to this country for the first time, must have received a favourable impression from the masses of bloom so universal during the month of May. Owing to the vast amount of blossom on the early fruits, and the favourable weather opening them almost simultaneously, the demand on the trees was too great for the supply, and blighted trees and a light crop of fruit will be the result. In other respects it has been a growing time; and the heavy torrents of rain that fell on the 29th and 30th, to more than 2½ inches in depth, have done much cleansing service, particularly in the orchards and other fruit-growing districts. The average temperature has been a little below the average, the year 1861 excepted, which was a very cold season. There have been no hot days and no frosts at night.

JUNE.—When spring has yielded to summer and the flowers are more numerous, the leaves thicker, and the grass and foliage of a deeper green, this is a most delightful month for a morning or evening ramble. It is on such evenings as closed the month, with the sun going down in all his gorgeousness and tinting the trees with gold, that the lights and shades of our neighbouring vales can be seen and felt in all their calm, silent, beauty and splendour. There have been but few such evenings during the month, and as a consequence they have been the more appreciated. There has been an absence of hot sunshine usually enjoyed and expected at this season of the year, and a preponderance of cold blighting winds, which have kept a large portion of vegetation at almost a standstill, and introduced the Potato-disease earlier than usual; but the fine weather that set-in in the latter part of the month has stayed its progress, it is to be hoped effectually, for some weeks to come. The last fortnight was good hay-making weather, and doubtless taken advantage of. On soils with a good porous subsoil the crop has been heavy, but on cold undrained lands it is light and poor. The Turnip-fly has been hitherto very destructive with all the Cabbage tribe. It is to be hoped July will prove more favourable in the Swede-

growing districts. This has been the coldest June for several years—even colder than the June of 1860, when more than 7 inches of rain fell.

JULY.—Our Anglo-Saxon ancestors called July *Mad month* (Mead month), from the meads being then in their bloom, but the month of July, 1862, has been an exception to the general rule. Wild flowers have been very scarce, and the few that have been seen have not come in due season, and the green-lane rambler feels disappointed as he wends his way in search of his favourites; but doubtless the coldness of the season has been the chief cause. The month of July is generally considered to be the warmest month of the year; but we hope it will be an exception in this respect also, for it has hardly reached the average temperature of May, and the temperature of May in the years 1858 and 1859 was considerably higher.

AUGUST.—Lammas-day. The 1st of the month is also called the Gule of August. This day, called by our Anglo-Saxon ancestors *Hlaf Mæsse* (Loaf Mass), was the feast of thanksgiving for the firstfruits of the corn; but owing to the coldness of the season there was but very little ripe corn on the 1st of the month. The weather proved more favourable than in the previous month, and, with the exception of being a little later than is usually the case, the harvest so far has been tolerably satisfactory. In this neighbourhood generally the garden fruits have been deficient and have disappeared as if by magic. Very little to be seen in the market any part of this month.

SEPTEMBER.—The weather has been very favourable for the ripening and the carrying-in of the late harvest, the average temperature having been higher both night and day than in recent years, though it has been no higher during the hottest part of the day. The range of the thermometer has been but very little, and the same temperature continuing almost from morning till night caused many people to think the weather was much warmer than it really was. The flower gardens are gayer now than they have been at any time during the summer. Although the Potato disease has not been so destructive as was expected earlier in the summer, the crop generally is small, yet the price rules low.

OCTOBER is more fertile in fruits than in flowers, and the wild nosegay gathered now is a small one, but the rambler is fully compensated in the beautiful tints the foliage is receiving during the early and middle portion of the month, but towards the close the Horse Chestnut, the Lime, and the Poplar were partially denuded of their autumnal beauties, and after a few more frosts equal to the one on the 30th, the landscape will be a barren one. The swallows and martens have left this year earlier than usual, owing, no doubt, to the extreme wetness and coldness of the season.

In an agricultural point of view, October has been unfavourable. The Swede and the Mangold have not made much progress in size, and are generally small. The land has been too wet in most places for Potato-lifting and Wheat-planting to be carried on advantageously; yet where the Wheat was planted early and now up, it is generally looking healthy.

NOVEMBER, characteristically a dull, dreary, melancholy, foggy period, came in and went out quite true to its character. It is the connecting link between autumn and winter in a meteorological point of view, which is generally severed suddenly and unexpectedly, as was the case on the 23rd, with 16° of frost and freezing all day in the shade. After this we may well say with the immortal Hood, "Where is the pride of summer?" Such an early and impetuous rush into winter, clipping autumn of its beauties, leaves him who "finds tongues in trees" dull and monotonous walks for a very long period, still during the month the weather has been more favourable than it frequently is in November. There have been no storms or hurricanes, and although there has been more than the average amount of frost, we have had a fair compensating amount of sunshine and very little rain.

DECEMBER, in contrast with the month of November has been a month of most extraordinary mildness—so much so, that its average has been considerably above that of the last thirty-five or forty years. What would make it appear more so is, that the range of the thermometer has been very small, there having been no warm sunny days or sharp frosts at night. In many places the grass has become quite fresh and green. That the weather has been pleasant is very generally admitted, but to be pleasant and beneficial are quite different matters. Undoubtedly the weather has been unseasonable, and either directly or indirectly the consequences will be felt in both animal and vegetable life;

for a mild growing time is by no means natural with short dull days and long nights.

TEMPERATURE AND RAINFALL AT FROME.

1862.	Highest day temperature.	Average day temperature.	Lowest night temperature.	Average night temperature.	No. of Days Rain or Snow fell.	Amount of Rain in ins. and parts.	No. of Frosts in each Month.
January.....	50	38	20	32	18	3.32	16
February.....	49	40	15	34	19	0.31	14
March.....	54	43½	18	35	18	5.33	11
April.....	64	50½	25	38½	14	3.32	5
May.....	68	60	37	45	15	5.00	...
June.....	67	61½	40	47	16	3.08	...
July.....	68	63	37	47	18	2.35	...
August.....	69	64	36	49	11	2.00	...
September.....	67	62	32	47	14	2.77	1
October.....	64	55	25	44	24	4.40	2
November.....	63	43	16	30	11	1.05	21
December.....	54	40½	28	37	18	2.08	8
Total.....	...	...	...	...	187	35.01	78

Negretti and Zambra's patent maximum thermometer in the shade, 4 feet from the ground.

Minimum thermometer tested by the above, 18 inches from the ground, exposed.

Rain-gauge 3 inches above the ground.—THE DOCTOR'S BOY, Frome, Somerset.

EFFECTS OF CROSSING.

I NEVER saw anything of the kind mentioned by Mr. Anderson-Henry at page 46; but Gärtner and Herbert both give instances where more seeds are fertilised by a congener than by the plant itself. Dr. Herbert says ("Amaryllidaceæ," 351):—"I had a pod from *Crinum* capense fertilised by *revolutum*, in which every ovule produced a seedling plant, which I never saw to occur in a case of its natural fecundation." On the same page it is said that Gärtner "cites from Kölreuter, that *Datura Metel* and *lævis* have each about six hundred seeds in a capsule; he found that a capsule from one of them fertilised by the other contained 640."—D. BEATON.

DISTRESSED LANCASHIRE WORKINGMEN BOTANISTS.

I HAVE received, from the same lady who sent me the first lot of clothing, 100 pairs of socks and stockings, 12 pairs of cotton sheets, and 35½ yards of tweed for petticoats. This gift will enable me to give to each person 2 pairs of stockings, for I have acted on the following plan:—Where I found two grown-up females, I gave them 3 pairs of stockings between them, and the same with males, in order to make the money go as far as possible.

Next week, the botanists who have received aid in this hour of trial from your many kindhearted readers, propose to thank both you and them for such beneficial sympathy, and, with one exception, timely aid. There is one family, who, I am sorry to say, starved too long to preserve their health, and now three of the family are ill, and one has gone. The doctor who attends them assured me that their illness had been brought on by insufficient food. The parents had done everything they could to keep from the parish, and the father had only had parish relief two weeks before I made my appeal in your paper, though he had been out of work ten months, and had a wife with six young children to keep. This family has been my heaviest charge, and will be for some time, for there is no sign of the mill starting at which the father worked.—JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE January Meeting of the Entomological Society was held on the 5th inst., the President occupying the chair, and was well attended, considering the season of the year and state of the weather.

Among the donations received since the last Meeting, were

the publications of the Royal Society, and continuations of Kroyer's new Natural History Journal published at Copenhagen and Mr. Hewitson's fine work on exotic Butterflies.

The energetic Treasurer of the Linnean and Horticultural Societies, W. W. Saunders, Esq., exhibited some interesting varieties of Galls: one of considerable size, a Root Gall, found at the root of Oak trees near Reigate; another of the size of a double fist, found also on the roots of a tree in the Zoolu country, South Africa, by Mr. Cooper, together with a third kind, which grows in clusters like grapes on the stems of a species of *Cissus*, also in the Zoolu country. He also exhibited a species of *Bruchus*, which lives in the beautiful seeds of *Erythrina Saundersonii* in Natal, each seed being infested by from one to four specimens of these obnoxious insects.

Mr. S. Stevens exhibited a monstrous specimen of *Papilio pammon*, collected in the Sulu Islands by Mr. Wallace, one of the hind wings of which was not more than half the normal size. Also a fine species of the very rare genus of Beetles, *Psaliognathus*.

Mr. Laing exhibited a beautiful green variety of *Ellopias prasinaria* taken on palings at Charlton; and Mr. Bibbs, some remarkable varieties of Butterflies and Moths taken near Worcester, including a suffused dark specimen of *Vanessa urticae*, a nearly white variety of *Arctia caja*, two varieties of *Clisiocampa lanestris* with a large red spot on the wings.

Professor Westwood exhibited a pouch or bag of a strong leathery texture, having the outside of floss silk, formed by a colony of caterpillars (of some kind of *Moth*?) on trees in tropical Africa, communicated by Vernon Wollaston, Esq. Numerous places of exit were formed in this bag, each having the threads of which it is formed convergent, as in the cocoon of the Emperor Moth. Also a number of preparations of mined leaves fixed upon glass, showing the caterpillars within the mines, when held against the light, and which had been prepared by Mr. S. Stone, of Brompton.

General Sir J. B. Hearsey exhibited a collection of the Sphingidae of India, containing thirty-two species, several of which appeared to be undescribed; and Mr. Percy Wormold a new British species of Trichoptera, being the *Limnephilus nobilis* of Kolenati, taken at Ruislip, Middlesex.

The following memoirs were read:—

1. Descriptions of a number of new species of the Coleopterous genus *Catascopus* collected by Mr. Wallace, being a supplement to a monograph on the genus recently communicated to the Society by Mr. W. W. Saunders.

2. A memoir of considerable extent on the geographical distribution and range of the Butterflies of Europe, by Mr. Kirby.

3. A memoir on *Omalium riparium*, and two species of *Homalota*, genera belonging to the family Staphylinidae, by Mr. G. R. Waterhouse.

4. On the descriptions of Ants of Equatorial Africa contained in M. Du Chaillu's book of travels by Mr. F. Smith. In this work ten kinds of Ants are described, and accounts given of their habits, the most remarkable being that of the *Bastrykooyah* Ant, a most ferocious species which travels about in large armies, devouring everything which falls in its way, fearing not even to attack and kill the Python itself. From an examination of the accounts given of this family of insects by different authors, it became evident that M. Du Chaillu's account was concocted from Mr. Savage's history of an Ant inhabiting the same country, *Anomma rubellum*; whilst M. Du Chaillu's illustration of the species was a copy of a figure of some species of *Termes*, and did not even represent an Ant.

5. Descriptions of a number of new species of Nocturnal Lepidoptera, collected in South Africa by Mr. d'Urban, by Mr. Francis Walker.

6. A memoir on *Lucanus Lama*, of Olivier, and its synonymy by Major F. Parry.

SPARROW-KILLING NOT MURDER.

I HAVE often seen both letters and articles in the London newspapers many times, and also quotations from French journals, condemning and ridiculing English farmers for destroying their best friends, the sparrows. I am not a farmer, but I do know the difference between a house sparrow and a hedge sparrow—the latter being really the farmers' friend, but the former his most destructive enemy. The male and female hedge sparrow closely resemble the hen house sparrow, and few but

bird-fanciers know one from the other. The habits, however, are totally different. Hedge sparrows are sweet song-birds, and are to be seen in almost every garden, but never in large flocks like the common or house sparrow. The latter lives entirely upon seed; and I am sure that any bird-fancier will bear me out in saying that no one ever saw a common sparrow eat a grub, a slug, or any other insect, save and except in their breeding season. They will then sometimes eat a very few small green insects, such as are to be found upon Rose trees (I think then more as a medicine than for food); but the number they take is so few that a thousand of them would scarcely clear a small Rose tree if much blighted with these insects. If any dispute what I say, let them try the experiment by putting up a score of these birds in a room, give them plenty of grubs or any other insects they please (if nothing else can be got, mealworms can always be procured from the bird-fanciers), with plenty of water of course, and they will not find one of them alive in three days; but let them put up the same number of hedge sparrows (which have been mistaken for the common hen sparrow), give them the same food in abundance—for they are great devourers of insects of almost every kind—and they will find these birds will live, in a short time sing, and do well. If fresh-caught birds, some few of them may die from confinement, as is the case with all wild birds, but enough will survive to prove the truth of what I have written; and it is surprising to me that farmers, who have been so condemned for a supposed folly, should not have thought it worth while to disabuse the public mind upon this (to them) important subject. I say important, for I have seen fields of Wheat, particularly along the hedge-rows, almost entirely destroyed for many feet in by these mis-called "farmers' friends." So much for our British farmers.

Now with regard to colonists. You say that the Governor of one of our colonies imported sparrows at a cost of £6 per dozen. I hope they were not the common house sparrow. Should any one wish to introduce birds into colonies—and many of our British birds would be very useful in destroying insects—they may easily tell which would be most suitable for this purpose by the beak; those that live upon insects have a much softer beak than those that live upon seeds. The seed birds have a hard, sharp-edged beak like that of the common sparrow, canary, or any of the finches, linnets, &c., none of which ever eat insects.—J. V.

[Your pages have for some time past contained many most able letters, *pro* and *con.*, regarding the cruelty or expediency of house-sparrow extirpation, in corn-growing districts especially; and, as truth alone is your object in all such practical discussions, I enclose this letter, which appeared in the *Standard*, and which I fully endorse, after many years' study of the habits of both the hedge and house sparrow genus. I have here scores of the former, and hundreds of the latter; the first enlivening my garden hedges and shrubberies with their cheerful notes, the last swarming in my evergreens and Ivy-matted walls and outbuildings! Indeed I have encouraged these colonies of merry chirpers, never allowing any to be killed, nor their nests to be taken, in the fond belief that I was harbouring an insectivorous bird in so doing! But alas! I must now record a verdict of graminivorous against my old pets, and, partial as I am to birds of all kinds, must fain condemn the house sparrow and tomtit as destructive to buds, grain, Peas, and bush-fruit.—AUDI ALTERAM PARTEM, *Aldwick, Sussex.*

P.S.—I hope you will find room for "J.V.'s." letter, were it only to plead the cause of that sweet songster, the hedge-sparrow, which, with the robin, cheers our sight and ear alike in this leafless season as they hop in our walks and flit in our hedgerows, melodious all the while!]

WORK FOR THE WEEK.

KITCHEN GARDEN.

As market-gardeners very generally sow their early crops upon sloping ground it would be advisable for others to adopt the same practice, by which, among other advantages, more heat and shelter are obtained. The slopes, of course, should run east and west, and are most convenient when about 3 feet 6 inches wide. They should, if possible, be close to the frame-ground, as many of the articles—viz., Radish, Early Horn Carrots, Lettuce, &c., will require occasional covering with litter, and frequent attention. Slopes of this kind, after carrying their spring and early summer crops, will be equally eligible for autumn ones, more especially

for Endive, autumn Carrots, or for raising the stock of winter Lettuces. *Asparagus*, the sooner the beds are manured and soiled the better. *Cauliflower*, sow a little seed, if not already done, in a box to be placed in a house at work. *Cabbage*, sow a small quantity of any early dwarf sort—the Vanack or Nonpareil—on a warm slope, also some white Spanish and Portugal Onions, and a pinch of Early Dutch Turnip. *Parsnips*, prepare ground by trenching or deep digging for sowing shortly. *Potatoes*, follow-up planting, at least the early kinds, soil them over 8 inches deep, and draw-off with the rake or hoe 2 or 3 inches in the early part of April as a clearing process. *Sea-kale*, plant; also Horseradish and Jerusalem Artichokes as soon as possible.

FLOWER GARDEN.

The season altogether has been most favourable for out-door improvements and alterations; but tender plants are in a very forward state, and, therefore, will require to be carefully protected from frosts. A small piece of ground would be useful as a reserve-garden for rearing evergreen shrubs—such as Laurels, Aucubas, Laurustinuses, Berberis, Rhododendrons, Box trees, &c.—which may be propagated at home or bought in from the nurserymen when a year or two old at a very trifling cost. They will come in very useful for filling-up beds or borders in winter, or for making improvements in the pleasure grounds. Many collections of Tulips are now so forward that unless protected in case of frost serious consequences would inevitably result to the embryo blooms, which, though below the surface, would be injuriously affected by it. *Ranunculus*-beds may be thrown-up in ridges of about 4 inches, taking care that the lower part of the bed remain undisturbed. By this means advantage can be taken of the first fine day for planting, should the weather prove fickle about the 14th of February; as when suffered to lie in that state the surface soil becomes sooner dry, and by simply raking level is immediately ready for putting in the roots. *Polyanthus* seeds may be now sown in pans. Some florists start them in a slight heat, and when up gradually harden them off. Look over and correct the general outlines of ornamental plantations. Break into all hedge-like lines, form bold recesses where space will admit of it, and endeavour to create variety. Biennials may be planted in flower-borders or beds. As there is no appearance of frost, Moss, Provence, and other hardy Roses may now be pruned; cut-out as much of the old wood as can be conveniently spared, and shorten-back young wood to the most prominent buds. The sooner that all Roses are planted now the better, except the more tender Chinese kinds. Roll gravel walks, sweep and clean as often as practicable. Weed Box, Gentian, and other edgings in mild weather.

FRUIT GARDEN.

Follow-up pruning and nailing. Thin orchard trees. Scrub off American blight with a hard brush. Clean off moss, lichen, &c. Make cuttings of choice Gooseberries, Currants, &c., taking care to pick out the buds at the lowest end of the shoot, in order to avoid suckers.

GREENHOUSE AND CONSERVATORY.

Keep up a mild and sweet atmosphere in the conservatory. If any plant is a prey to insects remove it immediately, to be thoroughly cleaned. Slightly increase the supply of water to the plants in the greenhouse. Keep down green fly. Give plenty of air, but beware of draughts. Cut down, number, and remove decayed Chrysanthemums; let them go dry in a cold pit. Cinerarias, if cramped in their pots, to be shifted into larger; likewise Chinese Primroses for spring work.

FORCING-PIT.

Introduce bulbs, Roses, Pinks, American shrubs, Lilacs, &c., in steady succession. Keep up a bottom heat of 75°, and an average surface temperature of 60° at night and 70° by day, with air occasionally.

PITS AND FRAMES.

The whole of the Verbenas, Petunias, Ageratums, Heliotropes, Salvias, and all the softwooded plants for planting-out in the flower-beds, except the Scarlet Pelargoniums, are best from spring propagation. Those in the store-pots may now be introduced into heat for that purpose; but many of them this mild season can be left till the first crop of cuttings is taken off, as they are in active growth. If the sorts are not scarce it is rather soon yet to begin with them, as they will require too much room before they can be planted-out in May. Auriculas to be top-dressed with two-year-old decayed hotbed manure and leaf soil. Poly-

anthuses grown in pots to be kept moderately moist, and a similar top-dressing, to that recommended for the Auricula, will be of great service to them.

W. KEANE.

DOINGS OF THE LAST WEEK.

GENERAL work much the same as the last week. Collecting leaves, wheeling dung and soil on crispy mornings, and when wet washing pots, cutting tallies, making stakes, and cutting-up one-year-old cut branches of spruce into twigs of different lengths for the flower-beds, thatching hurdles, making rough wooden portable boxes, &c.

In the KITCHEN GARDEN, took the opportunity of a dry day to stir the ground among Cabbages and Cauliflowers, and to put the earth close to Broccoli-stems. Stirred the soil among Radishes, Potatoes, &c.; put more Potatoes in shallow boxes to start, and will wait until the ground is more friable and dry before sowing Peas and Beans. We have had a long row of Parsley under protection, but as yet it has been little wanted, as the weather has been so mild, though unsettled. Several nights past, though mild at night, it was frosty before morning, and yet raining fast, and the thermometer at 40° by daybreak. At this season, therefore, it is scarcely safe to leave pits and frames uncovered, however mild the evening.

FRUIT GARDEN.

Sprinkled Vines and Peaches in the middle of the day, if at all warm or sunny, just to soften the buds. A few of the latter may be expected to drop, if much has been done to them in the washing and the dressing way; but that is often an advantage, rather than otherwise, as it saves thinning so much, and this, in general, we are too apt to neglect. Looked over Strawberries just moving. Keeping such plants extra damp now is very injurious, being very apt to cause the bud to split or rot at the centre. It is best, therefore, for the pots at present in houses to stand upon dry shelves, or on a little moss, and then there is less risk of over-watering. Plants that are forward and swelling will not hurt much, except as regards flavour; but those just moving, if allowed to stand in saucers with an inch of water in them, are almost sure to suffer from such treatment. It would be safer under such circumstances to turn the saucer over, and set the pot on the bottom of the saucer reversed. Pruned all sorts of trees, when the weather would permit, and moved some young Vines into an earth-pit, where there was a bed of leaves just a little hot, which bed, by-and-by, will come in for Potatoes.

CONSERVATORY.

Picked all signs of damp from the plants, and put a little fire on, especially during the day, to help to dissipate the damp, giving more air in proportion. As the weather is so uncertain, shut up pretty early in the afternoon. All watering is done the first thing after breakfast, and as little spilled on stage or path as possible.

STOVE.

Removed Begonias and Poinsettias out of bloom. Set Caladiums at rest—that is, their pots on sand to be kept moist, whilst no water is given to the pots, and fresh-arranged house, so as to make room for fine-leaved Begonias, Gloxinias, &c., before long. As this house averages only from 50° to 55°, and in cold nights is more near the former, a hand-light was placed over the Caladiums to keep them a little warmer. A few Gloxinias have also been placed in a vinery to start them slowly. Beneath the stage or platform in the small stove, the Genera zebra and others have been collected, to rest until wanted. Such plants as Cannas and Hedychiums, that did little good out of doors last year, are also packed in out-of-the-way places, where they will be safe from frost. The Pelargoniums in vinery were smoked twice, and the earliest are now seeking more room. Potting young plants was proceeded with as time and space could be obtained.

COLD PITS.

We hear that some were caught as well as ourselves by the sudden sharp frost of last week, but from the precautions used, nothing has suffered. Even the Verbenas that had a good amount of air all night, exhibit no trace of the visitation, but are luxuriant and healthy, and show that they are now relishing the repotting they had from 54's to 32's; the repotting, as you will recollect, being merely the transferring of a mass of plants—say three to the inch—from a small pot to a larger one. If Verbenas are not potted separately in the autumn, we would not

do it until March, unless we could give the pot bottom heat, and heat and air at top at will.

In a brick cold pit, we observe the Calceolarias, Salvias, &c., assuming a yellowish tinge, and we suppose we must let them wear it a little longer. This is entirely the result of dryness. Were we sure of such weather, we would water them, and give plenty of air, and they would soon be green enough, and too close together at too early a period; but if well watered now, and we should have a severe frost, they would then be more apt to suffer from being damp than they would be if dry. We do not expect such a frost; but it is as well to make sure, and, therefore, such plants will have little more water for a month to come than a skiff from the syringe in a sunny day, just to keep them from flagging.—R. F.

TO CORRESPONDENTS.

** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

BACK NUMBERS (S. R. T. B.).—We have received several copies of Nos. 50, 51, and 52, and shall be glad of more; but you and several others who have obligingly sent us copies have omitted to give your names and directions. We also want copies of No. 41.

GARDEN DRILL.—G. H. wishes to know where he can purchase one. We think those who make such horticultural implements would find it profitable to advertise them.

ICE-KEEPING (*An Eleven-years Subscriber*).—At page 14 we stated our own opinion upon your mode of ice-keeping, and at page 32 Mr. Beaton's. We shall be glad to know the result of your trial with no ventilation, and also of the experience of any of our readers who have tried ventilating against not ventilating an ice-house.

FRENCH CLOCKWORK FOUNTAINS (M. B.).—Our correspondent wishes to know where these, to be placed in a greenhouse, can be purchased.

MELON-CULTURE (*A. Rosling*).—We know of no separate work upon this subject; but if you refer to the indices of our last three volumes, you will find almost every point in Melon-culture discussed. Also in the last edition of our "Kitchen Gardening for the Many," you will find a good epitome of Melon-culture.

PRIMULA LEAVES DROOPING (*Subscriber, Lee*).—Bringing the plants from the moist air of a greenhouse to the intensely dry air of a sitting-room, will usually produce such flagging of the leaves. We introduce Primulas in a similar way, but we have either a glass shade over each pot, or plant the Primulas in a Bijou Plant Case. In neither mode of treatment do the leaves flag; and if you drop a single drop of gum water into the centre opening of each flower, it lasts longer in beauty.

FIELD MICE BARKING HOLLIES.—W. Hill will be glad of a hint as to the best way of getting rid of these pests. The woods and plantations are swarming with them. Quantities of Hollies, planted-out last April, are completely stripped of the bark from 2 to 3 feet high. Phosphorus poison has been tried, but this seems to have no effect. Poisoned grain would be dangerous on account of the Game.

GRUBS AT THE ROOT OF A FERN (*C. C., Stafford*).—The Fern is Asplenium viviparum. The grubs are the larvæ of Bibio Marci, a two-winged fly, which appears in great numbers in early spring. The grubs feed chiefly on decaying vegetable matter; but they also devour roots of plants, especially if not in good health. Lime water or gas tar water would doubtless dislodge them.—W. W.

SCOTCH FIR FENCE (*B. B.*).—We presume the line of trees you speak of, 5 or 6 feet high, has been planted either for shelter or ornament, as the Scotch Fir will be useless as a fence against cattle. Assuming it to be for one of the first-named purposes, and to consist of a single row of trees which are becoming naked at the bottom, we fear they have already stood too long untouched; but if they are still green at the bottom, thin them by taking away one-half of the number. If this is likely to make the place look naked, mark the trees you intend to remain, and cut away the lower branches of the others on the sides they touch and interfere with the permanent trees. This precaution ought to be taken in time, in order to retain the bottom branches as long as possible on the trees intended to make the future boundary; but this cannot have a permanent effect, as the natural habit of the tree to shed its lower branches will manifest itself in time; therefore, for a screen or fence under 12 feet high, we should have preferred Holly or Laurel, but as it is we would not advise you to clip the Scotch Firs. You may, however, top them if you do not want them hereafter for timber; but we would not advise more being cut-off than last year's shoots. If space and other circumstances allow of it, it would be better to plant a row of Laurel or Holly in front of the Firs, if the latter have lost their green branches at the bottom; for, unlike a deciduous tree, the Scotch Fir never regains its lower branches, and clipping only helps to destroy the green.

JARGONELLE PEAR TREE 2 OR 3 FEET FROM THE WALL (A. B. C.).—If your tree is healthy and vigorous, it might be very safely cut-down, so as to leave all the principal branches a foot long, or even less than that if you can find a smooth place, where we would advise the branch to be grafted. Even if you thought of continuing the same kind, it would be as well to put in some grafts in the ordinary way of crown-grafting, as the shoots from them could be made to point more in the direction they are wanted to grow, than if produced from the trunk of the tree. Other kinds might also be introduced at pleasure. April is soon enough for grafting in this way, but your scions ought to be in readiness before. Although few Pears excel the Jargonelle, we would, nevertheless, try some later kind, as Glou Morceau, Beurré d'Arenberg, Marie Louise, Vicar of Winkfield, and others. If the tree is very vigorous, it would be as well to root-prune it a little at the time it is cut-down; otherwise the superabundance of sap may seek for itself some other outlet than the limited one left for it. Your former letters, which you say were addressed to us on other subjects, have either not come to hand, or have been answered in a way in which you may have overlooked them.

YOUNG BRANCHES OF PEACH TREES DYING (L. G.).—The roots of the trees against the back wall of your orchard-house have either been kept too dry, or they have descended into an ungenial subsoil. If the latter supposition is the truth, you must cut away those roots, and by surface-manuring slightly, and mulching, induce the roots to keep more upwards. The tree which bore no fruit had sufficient sap to perfect its young wood; the trees well laden with fruit had not such sufficiency.

GLASS LABELS (W. F. S. A.).—Our correspondent wishes to know where glass labels for Rose trees are to be had. We make them for ourselves by making a glazier scratch with his diamond the names on strips of glass. In notches filed on the edges, wire may be fastened for attaching them to the trees.

PHYCELLA HERBERTI AND CYPELLA HERBERTI CULTURE (T.).—All the Phycellas, and all other bulbs from the same country, Chili, are very precarious when grown in pots. They do much better in raised borders under a south wall. Your dry bulb of Phycella Herberti ought now to be just pushing the points of the roots from the black bulb after having been at rest since last August. None of the Phycellas should ever have peat in pots, nor be watered after the end of August until February; and as they cast the old roots like Hyacinths, they are more safe out of the pots packed in sand in a box or drawer, and should be repotted early in February in good loam made light with sand, and the bulbs covered up to the neck with the soil. The greenhouse is too hot for them at the time of flowering, or after the leaves have finished their growth early in June, and it is in the excitement of overhear that causes them to go wrong, fail of flowering, and keep green out of season. A cold-pit treatment is best for them. *Cypella Herberti* ought to grow and bloom freely enough in a greenhouse in June and July if it had a winter's rest, and was in half peat and half loam the previous season; but many greenhouses are more for roasting plants in summer than helping them on. All such summer-growing bulbs do better in damp cold pits than in most greenhouses from April to October.

GLADIOLUSES IN POTS (A Cottage Gardener).—All that you and your friends have to do with your new purchases of Gladioluses, is to put them in No. 48-pots, one root in each, during the middle of February. Place the bulbs just within the soil, which should be as for Fuchsias, rather damp but not wet or dry, and do not water them, but put them out of sight somewhere, a cool cellar being the best place till the leaf is half an inch out of the ground; then a cold frame to the second week in May. Plant them then, where Cauliflowers would be likely to succeed well, in the garden, or if they are to be kept in pots repot them, and keep to the same first-class Fuchsia compost.

AMARYLLIS (Idem).—There are several kinds, and every kind requires a different treatment; but if we knew your sort we would aid you.

CLIMBER FOR A SHADED MOSS-HOUSE (W. H. B.).—As you did not mention the part of the country or of the three kingdoms where the moss-house is, all we can do is to answer as if it were on the shore of the Pentland Firth, to make sure of our selection being fit for the moss-house. And the best climber we know for a moss-house on the Pentland Firth is the Ruga Rose; it will cover it all over very soon, but not so thickly as to spoil the thatch. Gourds of all kinds are grown in the open air.

VARIEGATED MINT AS EDGING (Idem).—It will certainly make edgings not more than 4 inches high in one season in the strongest and richest land if it is treated properly, as we last season reported from the practice of Mr. Eyles at South Kensington, and also as we have often stated in these pages.

MOSSSES (Moss).—C is *Hypnum proliferum* of Linnaeus, and *Hypnum recubitum* of "English Botany." G is *Hypnum cupressiforme* of Linnaeus, and *nigroviride* of "English Botany." The "class of Mosses to which these belong," is that in which the theca is lateral—that is, the flower and fruitstalk come from the sides of the Moss plants, not from the top, or terminal, as in the Bog Moss or sphagnum.

CHRYSANTHEMUMS NOT BLOOMING (Idem).—The reason why your Chrysanthemums do not, or did not, open their flower-buds in the greenhouse is, that they were too late in forming the flower-buds. If you could introduce the plants to stove heat, and give them as much as 60° at night, and plenty of water, every one of them would open. We have seen such a thing forty years ago.

YELLOW-BERRIED HOLLY (Idem).—It is not very common, although there is no reason why it should be scarce. There is only one way of propagating it; bud or graft it on stocks of the common Holly.

GLASS EFFRONES (Patekin).—We have had no experience of these, and cannot advise.

PUTTING LAPS IN A GREENHOUSE (Idem).—We would putty all laps, and give air otherwise.

MELON-HOUSE (A Real Greenhorn).—We approve of the whole of the arrangements. We would only make one suggestion. In the bed, make a layer of concrete, smooth on the surface, below the pipes; and then, by a drain-tile, you can pass water among and through the rubble, and thus have moist bottom heat whenever you like. The same would be effected by having 6 inches of rubble above the pipes, 2 or 3 inches of concrete, then 3 or 4 inches of rubble drainage, and then the soil. The first mode would be the more simple.

FOILAGE PLANTS FOR A BED (A Young Sub., Herts).—You say that your "lady employer is desirous of having a bed entirely of foliage plants in the flower garden next summer;" and instead of, for your own improvement, making out a list of the best foliage-plants for beds which you have read about for the last three years, or have seen or heard of otherwise, you ask us to do so for you. You must also have read in this Journal that we do not supply lists to plant any particular bed; all that is proper for us is to criticize the lists for planting which our subscribers send up to us for that purpose. All young gardeners ought to have known that long ago. Make use of your own judgment, and we will criticize your selection and plan if you send them to us.

CAMELLIA LEAVES SPOTTED (J. E.).—The spots are occasioned by the roots being kept too wet or too dry. There is deficient root-action from some cause which we can only guess at. Probably the centre of the ball of earth is hard and dry. The Fern you enclosed is *Cyrtomium falcatum*.

USE OF A VACANT PIT (A. E. F.).—We cannot afford either time or space to answer all your queries. Fine-foliaged Begonias may now be moved to the forcing-pit, and kept rather dry even there until the fresh leaves begin to come, when they should have most of the old soil shaken from them, be repotted, and kept close and warm until growth commences. You may place there cuttings of any Fuchsias. The young plants in the greenhouse, if wanted large, would stand more than greenhouse heat. The large plants, now dry and leafless, should have a little water. The same may be said of cuttings of all kinds of Geraniums, Petunias, Cobæas, Plumbagos. They will stand from 55° to 65° at night, but must have more air as soon as struck. The Stephanotis we presume is in the forcing-pit, as unless your greenhouse is kept warm it would not be healthy there; and the cuttings of that will stand from 5° to 15° more heat after it is struck than the Geraniums and Fuchsias. The coolest part of such a pit would do to strike cuttings of Phloxes; but the cuttings will be best obtained a couple of months or so after this, when the young shoots are some 2 or 3 inches in length. You may sow any perennial greenhouse seeds, whether herbaceous plants or shrubs, and by potting them off early, they will make nice little plants before winter. Of seeds of annual plants for the greenhouse we should scarcely sow any now, except the different sorts of Cockscombs. All other annuals would be tender and drawn. For planting out of doors, we would confine annual-sowing now chiefly to Intermediate and Ten-week Stocks; and these, as soon as fairly up, would need to be moved to a cooler place. The same may be said of all sorts of Pansies, and the new Chinese Pinks.

CUCUMBER-PIT (A. H.).—The simplest plan against your south wall would be a pit above the ground level—say 6 feet wide, front wall 2 feet in height, plate for rafters on wall 4 feet in height; flue, single or return, in centre; platform across, with means for letting the heat up; sashes made to slide, and entrance obtained by moving sashes. The following would be a little more expensive but much superior, making a house instead of a pit:—Front wall 2 feet high, with ventilators in it; width, 8 feet; back wall, 8 or 9 feet; roof fixed; sash-bars 3 inches, to receive glass 18 inches wide by 12; trellis, 15 inches from glass; wood ventilator hinged at top, 9 inches wide; flue, 2 feet from front, and pots placed over flue.

WHITE AND BROWN SCALE ON FERNS (Ignoramus).—Try dipping the Ferns in size or gum water, just strong enough to be a little sticky between the thumb and finger. Keep the plants in a shaded place for a day or two, and then dip them and gently move them about through clear water at about 120°. If very bad, it will be best to let the fronds ripen by curtailing water, and then cut-down freely and start afresh—that is, if the kinds will admit of that treatment. Such plants could then be washed at the base of the stems, and a fresh potting given them, so as to remove a portion of the old soil, and fresh growth encouraged.

CUCUMBERS AND MELONS IN A HEATED GREENHOUSE (A Constant Subscriber, Britonferry).—We would advise training the plants up the front and top of the wall, and then 18 inches from the glass roof, putting the pots of Melons in front and the Cucumbers at the back. We would have entered more fully into your case, but cannot give you more definite directions than you will find at page 24; only, when you have good strong stems of Cucumbers, you must stop them often, as you want a continuous supply, whilst the Melons will only ripen one crop.

GERMAN IVY (J. H.).—You will find all we know about it at page 795 of our last volume. Any of the large nurserymen who advertise in our columns could procure it, if they do not happen to have it. The cocoa-nut-fibre dust was advertised in our last Number by Messrs. Barsham, Kingston-on-Thames.

MARIE LOUISE PEAR UNFRUITFUL (Tyro).—If you cut it down as you propose, you will only have, as its successor, a wild Pear or whatever kind it was grafted on. You had better shorten the branches and graft on the stumps, as recommended in the present Number to the owner of another barren Pear tree.

GRAPES RIPE BY AUGUST (Y. Z.).—To have Grapes ready for the 1st of August, you will not be too soon if you begin to break the Vines very quietly at once, and the Grapes will be none the worse if ripe a few days earlier, though a fortnight or even three weeks later would do.

PLUNGING MATERIAL FOR A PIT (An Irish Subscriber).—The best material is just according to circumstances. If your pots stand near the bricks and tiles, cocoa-nut fibre will do well to pack among your pots, because it will keep the heat about them, from its nonconducting property. If you placed your cocoa-nut fibre a foot thick over your rubble, and then set or plunged small pots on it, you would obtain little bottom heat from the same cause, so long as the fibre next the rubble was dry. If damp all through, and water placed in contact with the pipes, your fibre would then absorb and conduct heat. Where nice growth is desired, we should prefer sweet tan to any fibre, though we have not tried the latter for the purpose. For neatness, we would as soon have sand as anything. It is easily moistened. We recommend the "Fruit Manual" for descriptions, and the "Florist and Pomologist" for coloured representations of the best fruit. There is no modern work on fruits with coloured drawings of them exclusively.

A BELT OF TREES ON CLAY SOIL (An Old Subscriber).—On a strip of cold, heavy, damp land that has been in fallow for the last five years, after a crop of Scotch Fir, Yew, and Elm, we would not plant any of the Fir tribe now, but Elm would do quite as well as before. For country work the wood of the Black Italian Poplar and that of the Huntingdon Poplar come soonest to hand, and pay best; and they and the Elms are just the right kind of timber for such a strip of land.

CLIMBER NOT BLOOMING (J. C.).—It is *Jasminum campanulatum*—a very old stove plant that will never thrive in a greenhouse.

VARIOUS (H. A. Doyne).—You will see about *Gladioluses* in pots in an answer to-day to another correspondent. Plant your Ashleaved Kidney Potatoes at the beginning of March in light rich soil in a sheltered situation. You may safely nip off the tops of the over-tall *Verbena* cuttings.

ORCHARD-HOUSE (Novice).—We see nothing against your system answering, except your ventilation. The 18 inches all the way along the front will do; but if you have no more than the two end lights at top, of 36 by 20 inches, then we also judge that the Vines, and more especially the Peaches and Apricots, will be eaten up by red spider. Have a ventilator at the apex equal to 10 or 12 inches all the way, and you may do, or as is represented in Pearson on "Orchard-Houses," page 43. The bush Vines would be as well not to be more than from 5 to 6 feet.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

HYBRID BETWEEN PHEASANT AND FOWL.

As this subject has attracted notice in our columns of late, we are anxious to give our own experiences in the matter. We had seven hybrids that were the produce of one hen. A tame cock Pheasant had been brought up in the yard with the fowls, and chose as his mate a chicken of his own age, a rather small Brown Dorking hen. They never, either of them, consorted with or took any notice of the other fowls, but constantly wandered away together. They lived in a rick-yard principally. It was bounded by that which is now becoming a scarce sight—a hedgerow. The hen stole her nest there and brought out her chickens.

It has often been said that spangled fowls, whether Malays, Polands, or Hamburgs, derive their spangled breasts from some mixture of Pheasant blood. Nothing can be more erroneous. The produce of these birds was neither Pheasant nor fowl, yet so plainly a mixture of both that no one could be deceived as to its origin. It was decidedly a hybrid incapable of breeding, yet there was sufficient difference of size and even of appearance to cause every one to call the birds cocks and hens. They were so only in name. Not one had the comb of the fowl, nor the rich red face of the Pheasant. The so-called hens took interest in nothing. The cocks would watch the fowls all over the place for the pleasure of sitting on the eggs, and we have often regretted since that we did not, as an experiment, allow one of them a few eggs. We have since seen so many curious mothers (?) that we have no doubt these would have done very well. We will attempt to describe them. The largest and finest bird was brown-bodied, with black hackle and saddle, large pheasant-shaped body; head, eye, and carriage belonged to the Pheasant; beak, five claws, and tail, although long, made up of ten straight feathers, belonged to the hen. Some of the smaller birds, called hens, evidently threw back to the hen's forefathers, as they had most unmistakable Dorking plumage. None had fowls' tails. Most of them had five claws; several were speckled brown and white, but there was not a pure Pheasant's feather, a spangle, or a lacing among them. Some had the dark head and neck of the cock Pheasant, but no approach to the colour, gloss, or brilliancy of these, nor were they composed of the same small feathers. They were tame spiritless things. After the novelty had worn off they were hardly interesting, and we gave them away.

Some time afterwards we were offered another, which our friend said was bred between a cock Pheasant and a Spanish hen. We had our doubts, but the first sight dispelled them. It was the finest bird of the sort we have ever seen, thoroughly black all over, with the glossy tint of the fowl; but having the head, tail, shape, and carriage of the Pheasant. We should have liked to have kept this one, but it was so spiteful we were obliged to kill it; no bird could live with it. This, again, had neither comb nor red eye.

In every instance that we have known, and we believe in all other cases, the cross has been between the cock Pheasant and common hen; we have never known a fowl take to a hen Pheasant. It is also absolutely necessary that the Pheasant should not only be a tame-bred bird, but that he should be brought up with the hens he is intended to breed with. With every help, knowledge, and contrivance crossing is seldom accomplished. Crosses are almost unknown where birds are in a state of nature, and those that have occurred have generally been among escaped tame birds in the neighbourhood of keepers' houses.

We have never met with a cross between a Partridge and any other bird.

MANCHESTER POULTRY SHOW.

FROM accidental causes I am only this day (January 17th) in receipt of your Journal of the 6th inst., where I observe at page 16, when commenting on the above Show, the Judges are accused of making a mistake in Class 65. Of course all persons must know the very difficult and unsatisfactory position a poultry judge occupies at the present day, and a "mistake" is very possible, as it may arise from several causes; but with regard to the pen of fowls in question (presuming it as implied that the first and second prize pens should exchange place), writing from memory, if a straw-coloured hackle, with brassy feathers in the wings of a Silver-pencilled Hamburg cock are points of excellence I allow the Judges are wrong in their decision; but if otherwise, maintain our award to be right.—WM. LLOYD.

POULTRY CLUB.

A MEETING, in connection with the Poultry Club, was held at Liverpool on Wednesday, 21st inst., Mr. Stretch in the chair, the following gentlemen being present:—Messrs. Teebay, James Munn, Tudman, Eden, Douglas, T. H. Ashton, Kelleway, E. Smith, Glendinning, Ashcroft, Hyde, Wood, Walthew, Capt. Heaton, &c.

It was proposed by Capt. Heaton, and seconded by Mr. Wood, "That a Poultry Club be established."

Proposed by Mr. Munn, and seconded by Mr. Kelleway, "That the yearly subscription be 10s. 6d."

Proposed by Mr. Wood, and seconded by Mr. Munn, "That Mr. Tudman, Ash Grove, Whitechurch, Salop, and Mr. H. Ashton, 4, The Terrace, Richmond Hill, London, S. W., be the Honorary Secretaries."

Proposed by Mr. Kelleway, and seconded by Mr. S. H. Hyde, "That the next General Meeting be held at Worcester, at the time of the Agricultural and Poultry Shows."

The following gentlemen were elected Stewards for 1863:—Mr. T. Stretch, Capt. Heaton, Mr. J. Hindson, Mr. T. H. D. Bayley, Mr. James Munn, Mr. R. Teebay, Mr. T. P. Wood, jun., Mr. Kelleway, Mr. W. H. Berwick, Mr. Peter Eden, Mr. S. H. Hyde, Mr. James Douglas.

All persons desirous of becoming Members of the Club are requested to communicate with Mr. Tudman, who will receive their subscriptions.

LIVERPOOL POULTRY EXHIBITION.

THIS was held on the 21st and 22nd inst. There were about 370 pens of Poultry and 100 of Pigeons.

JUDGES.—For Hamburgs, Game, and Game Bantams, Mr. R. Teebay. For other varieties, Mr. G. Fell, of Warrington. For Pigeons, Mr. Harrison Weir. The following were their awards:—

SPANISH.—Silver Cup, R. Teebay. Second, H. Lane. Third, J. K. Fowler. Highly Commended, J. R. Rodbard; W. Brundrit.

DORKINGS (Coloured).—Silver Cup, Viscountess Holmesdale. Second, Capt. Hornby. Third, C. H. Wakefield. Highly Commended, A. Potts; Viscountess Holmesdale; Capt. Hornby; W. T. Everard; Rev. J. F. Newton E. Tudman.

DORKINGS (Silver-Gray).—First, E. Musgrove. Second and Third, G. Cargey. Highly Commended, T. Statter.

COCHIN-CHINA (Buff and Cinnamon).—Silver Cup, C. Felton. Second, Mrs. H. Fookes. Third, E. Musgrove. Highly Commended, T. Stretch; H. Bates; Mrs. H. Fookes; J. W. Kelleway; R. E. Ashton.

COCHIN-CHINA (Partridge and Grouse).—First, Capt. Heaton. Second, J. Shortrose. Third, T. Stretch. Highly Commended, C. Felton; C. H. Wakefield; E. Musgrove.

BRAMA FOOTRA.—First and Second, R. Teebay. Highly Commended, H. Lacy.

GAME (Black-breasted Red).—Silver Cup, J. Hindson. Second, M. Billing, jun. Third, Mrs. Hay. Highly Commended, J. Fletcher.

GAME (Brown Red).—First, J. Fletcher. Second, Rev. F. Watson. Third, T. Statter. Highly Commended, J. P. Smith; T. West; J. Wood.

GAME (Duckwing and other Greys).—First, J. Hindson. Second, F. Worrall. Third, J. Foden. Highly Commended, G. Hellewell.

GAME (Other varieties).—First, T. West. Second, A. Guy. Highly Commended, W. Dawson.

HAMBURGHS (Golden-pencilled).—Silver Cup, J. Munn. Second, J. E. Powers. Third, Rev. T. L. Fellowes. Highly Commended, C. W. Brierly. Commended, J. Munn; W. Kershaw.

HAMBURGHS (Silver-pencilled).—First, J. Robinson. Second, S. Shaw. Third, D. Harding. Highly Commended, C. Moore; J. E. Powers; D. Harding; S. Shaw.

HAMBURGHS (Golden-spangled).—First, W. Cannan. Second, H. W. B. Berwick. Third, S. H. Hyde. Highly Commended, N. Marlor. Commended, H. Carter.

HAMBURGHS (Silver-spangled).—First, W. Cannan. Second and Third,

J. Fielding. Highly Commended, J. Robinson; R. Bell; Commended, S. Shaw.

POLANDS (Any variety).—First, H. Carter. Second, R. P. Williams. Highly Commended, Miss E. Beldon.

BANTAMS (Black and Brown Red Game).—Silver Cup, J. W. Kelleway. Second, J. Camm. Third, T. H. D. Bayly. Highly Commended, T. H. D. Bayly; E. Yardley; M. Turner; J. Camm; W. S. Forrest.

BANTAMS (Duckwings and other Game varieties).—First, W. Silvester. Second, R. Horsfall, jun. Third, W. Lawrenson. Highly Commended, T. Davies; J. Camm.

BANTAMS (Other varieties).—First, T. H. D. Bayly. Second, M. Leno, jun. Highly Commended, J. Mangnall.

DUCKS (Rouen).—First, J. Munn. Second, R. E. Ashton. Third, S. Shaw. Highly Commended, E. Longton; T. Robinson; R. E. Ashton. Commended, J. Foden; T. Statter.

DUCKS (Aylesbury).—First, T. E. Kell. Second, J. K. Fowler. Third, Mrs. T. W. Hill.

DUCKS (Other varieties).—First, T. H. D. Bayly. Second, F. W. Earle.

COCHIN-CHINA CHICKENS (Buff and Cinnamon).—Cup, A. F. Watkin. Second, J. W. Kelleway. Third, T. Stretch. Highly Commended, T. Stretch; H. Tomlinson; Rev. G. Gilbert; Mrs. H. Fookes; J. W. Kelleway.

COCHIN-CHINA CHICKENS (Partridge and Grouse).—First, T. Stretch. Second, E. Musgrove. Third, R. White. Highly Commended, E. Musgrove. Commended, T. Stretch.

SINGLE COCKS.

COCHIN-CHINA (Buff and Cinnamon).—First, Mrs. H. Fookes. Second, E. Smith. Third, H. Chavasse. Highly Commended, T. Stretch; E. Musgrove; H. Bates. Commended, J. T. Lawrence; T. Boucher.

COCHIN-CHINA (Partridge and Grouse).—First, E. Musgrove. Highly Commended, Capt. Meaton.

DORKING (Any variety).—First and Second, Viscountess Holmesdale. Highly Commended, T. Statter; J. D. Hewson.

SPANISH.—First, J. Potter. Second, T. P. Wood, jun. Highly Commended, R. Teebay; W. W. Brundrit.

HAMBURGH (Golden-pencilled).—Prize, J. Munn.

HAMBURGH (Silver-pencilled).—Prize, D. Harding.

HAMBURGH (Golden-spangled).—Prize, J. Mellor. Highly Commended, W. Kershaw; J. Davies; W. Worrall.

HAMBURGH (Silver-spangled).—Prize, J. Fielding.

GAME BANTAMS (Black and Brown Reds).—First, J. W. Kelleway. Second, E. Musgrove. Third, T. Moss. Fourth, T. H. D. Bayly. Highly Commended, E. Yardley.

GAME BANTAMS (Other varieties).—First, C. W. Brierly. Second, W. O. Kenyon. Highly Commended, J. Munn; W. Lawrenson.

SWEEPSTAKES.

GAME COCKS.—First, F. Fletcher. Second, J. Hindson. Third, T. Statter. Fourth, J. Stubbs. Fifth, J. S. Butler. Highly Commended, T. Robinson; R. Swift; T. P. Wood, jun.; G. Cargay.

Cockerels.—First, M. Billing, jun. Second, S. Mathew. Third, J. Hudson. Fourth and Highly Commended, J. Fletcher. Fifth, J. S. Butler. Commended, M. Billing, jun.; J. Wood; S. Mathew; N. Grimshaw; C. Kellock.

PIGEONS.

CARRIERS.—First and Second, P. Eden. Commended, A. L. Silvester.

ALMOND TUMBLERS.—First and Highly Commended, F. Else. Second, P. Eden.

SHORT-PAKED TUMBLERS (Any other variety).—First, P. Eden. Second, E. T. Archer. Commended, F. Esquilant.

POWTERS.—First, R. Fulton. Second, S. Robson. Highly Commended, P. Eden. Commended, T. H. Evans.

JACOBS.—First, Highly Commended, and Commended, J. T. Lawrence. Second, F. Esquilant.

TURBITS.—First, S. Shaw. Second, A. L. Silvester. Highly Commended, J. T. Lawrence; S. Shaw.

BABES.—First, P. Eden. Second, J. T. Lawrence. Highly Commended, S. Shaw; J. T. Lawrence. Commended, T. D. Walker.

OWLS.—First and Second, F. Else. Highly Commended, A. L. Silvester. Commended, H. Morris.

FANTAILS.—First, J. W. Edge. Second and Highly Commended, F. Else. Highly Commended, D. Thwaite. Commended, J. R. Bailly, jun.

TRUMPETERS.—First, S. Shaw. Second, W. H. C. Oats. Highly Commended, J. R. Bailly, jun. Commended, S. Robson.

ANY OTHER BREED.—First and Third, S. Shaw. Second, A. L. Silvester. Fourth, F. Esquilant. Highly Commended, A. P. Leite; A. S. Bretherton. Commended, H. Yardley.

THE GREAT FRENCH POULTRY FARM.

WITH care and good management, no branch of domestic industry is more profitable than rearing poultry. Many persons have supposed that what is profitable on a small scale might be made still more so when carried on to a larger extent, but repeated experiments in this and other countries have proved this to be a mistake. The secret of the matter is, that hens cannot thrive and lay without a considerable quantity of animal food. Where but a limited number of fowls are kept about the farmyard, the natural supply of insects is sufficient to meet this demand; and hence, when attempts have been made to extend the business beyond this source of supply, they have not prospered. It will be seen from the following interesting account, that M. de Sora, of France, has adopted a method that has proved completely successful, by affording an artificial supply of this essential portion of food.

The French practical philosophers certainly know how to make the most of things. A M. de Sora has recently discovered the secret of making hens lay every day in the year by feeding them on horseflesh. The fact that hens do not lay eggs in winter as

well as in summer is well known, and the simple reason appears to be that they do not get the supply of meat which they obtain in the warm season from worms and insects. M. de Sora was aware of all these facts, and living at the time upon an old, delapidated estate a few miles from Paris, the acres having been bequeathed to him a few years previously, he set himself earnestly at the task of constructing a henary which should be productive twelve months in the year. He soon ascertained that a certain quantity of raw mince-meat, given regularly with other food, produced the desired result; and commencing with only some 300 female fowls, he found that they averaged the first year, some twenty-five dozen eggs in the 365 days. The past season he has wintered, thus far, about 100,000 hens, and a fair proportion of male birds, with a close approximation to the same results. During the spring, summer, and autumn they have the range of the estate, but always under surveillance. In winter their apartments are kept at an agreeable temperature; and although they have mince-meat rations the year round, yet the quantity is much increased during the cold weather. They have free access to pure water, gravel, and sand, and their combs are always red. To supply this great consumption of meat, M. de Sora has availed himself of the superannuated and damaged horses which can always be gathered from the stables of Paris and the suburbs. The useless horses are taken to an *abattoir* owned by M. de Sora himself, and there neatly and scientifically slaughtered. The blood is saved clean and unmixed with offal; it is sold for purposes of the arts at a remunerative price. The skin goes to the tanner; the head, hoofs, shanks, &c., to the glue-maker and Prussian blue manufacturer; the large bones make a cheap substitute for ivory with the button-maker, while the remainder of the osseous structure is manufactured into ivory black, or used in the shape of bone-dust for agricultural purposes. Even the marrow is preserved; and much of the fashionable and highly perfumed lip-salve and pomade was once enclosed in the leg bones of old horses. Uses are also found for the entrails, and, in fact, no portion of the beast is wasted.

The flesh is carefully dissected off the frame, of course, and being cut into suitable proportions, it is run through a series of revolving knives, the apparatus being similar to a sausage machine of immense size, and is delivered in the shape of a homogeneous mass of mince-meat, highly seasoned, into casks, which are instantly headed-up, and conveyed per railroad to the egg-plantation of M. de Sora.

The consumption of horses for this purpose by M. de Sora has been at the average rate of twenty-two per day for the last twelve months, and so perfectly economical and extensive are all his arrangements, that he is enabled to make a profit on the cost of the animals by the sale of the extraneous substances enumerated above—thus furnishing to himself the mince-meat for much less than nothing, delivered at his henary. It has been ascertained that a slight addition of salt and ground pepper to the mass is beneficial to the fowls; yet M. de Sora does not depend upon these conditions alone to prevent putrefaction, but has his store-rooms so contrived as to be kept at a temperature just removed from the freezing-point through the year, so that the mince-meat never becomes sour or offensive; the fowls eat it with avidity; they are ever in good condition, and they lay an egg almost daily in all weathers and in all seasons. The sheds, offices, and other buildings are built around a quadrangle, enclosing about twenty acres, the general feeding-ground. This latter is subdivided by fences of open paling, so that only a limited number of fowls are allowed to herd together, and these are ranged into different apartments, according to their age, no bird being allowed to exceed the duration of four years of life. At the end of the fourth year they are placed in the fattening-coops for about three weeks, fed entirely on crushed grain, and then sent alive to the city of Paris.

As one item alone in this immense business, it may be mentioned that in the months of September, October, and November last, M. de Sora sent nearly 1000 dozens of capons to the metropolis. He never allows a hen to sit. The breeding-rooms are warmed by steam, and the heat is kept up with remarkable uniformity to that evolved by the female fowl during the process of incubation, which is known to mark higher on the thermometer than at any other period. A series of shelves, one above the other, form the nests, while blankets are spread over the eggs to exclude any accidental light. The hatched chicks are removed to the nursery every morning, and fresh eggs laid in to supply the place of empty shells. A constant succession of chickens is thus insured, and, moreover, the feathers are free from

vermin—indeed a lousy fowl is unknown on the premises. M. de Sora permits the males and female to mingle freely at all seasons, and after a fair trial of all the various breeds, has cleared his establishment of every Shanghai, Cochinchina, or other outlandish fowl, breeding only from old-fashioned barnyard chanticleers, and the feminines of the same species. He contends that the extra size of the body and eggs pertaining to these foreign breeds can only be produced and sustained by extra food, while for capon-raising the flesh is neither so delicate nor juicy as that of the native breed. The manure produced in this French establishment is no small item, and since it forms the very best fertiliser for many descriptions of plants, it is eagerly sought for at very high prices by the market-gardeners in the vicinity. The proprietor estimates the yield of this year at about 100 cords. He employs nearly 100 persons in different departments, three-fourths of whom, however, are females. The sale of eggs during the past winter has averaged about 40,000 dozen per week, at the rate of six dozen for four francs, bringing the actual sales up to 250,000 dols. per annum. The expenses of M. de Sora's hennery, including wages, interest, and a fair margin for repairs &c., are nearly 75,000 dols., leaving a balance in his favour of 175,000 dols. per year.—(*Scottish Farmer*.)

MULE BIRDS.

Will the undernoted crosses give beautiful-plumaged birds?—Goldfinch and Bullfinch, Chaffinch and Buff Canary, Chaffinch and Yellow Canary, Goldfinch and Yellow Canary, and Goldfinch and Buff Canary. Should a Bullfinch cock and Goldfinch hen be put together, or the reverse, and so of the others? What is the best way to proceed? Should they be wild or tame, and kept in the house or outside?—T. S.

[The crosses mentioned will give beautiful-plumaged birds, with the exception of the Chaffinch and Buff Canary, which would throw out dull colours. In each case the Goldfinch and Chaffinch should be the male bird, and should be tame; if possible, brought up from the nest. The birds would do best in the house; and, provided they are to be turned into an aviary, they must be well paired previously. But we would recommend that they be put in separate breeding-cages.]

DESERTION OF HIVES, AND ITS CAUSES.

I HAVE perused with much pleasure Mr. Lowe's interesting article on bees deserting their hives, and can confirm his observation of the fact that when colonies of the Italians and the common species are in close proximity, a certain degree of intermingling is the result. I am disposed to attribute this circumstance to individual bees mistaking their hives, and either by eluding or bribing the sentinels, obtaining a recognised status in the colony to which they have in the first place accidentally introduced themselves. With regard, however, to the common stock in which 20 per cent. of the Italian race were discovered, we must I think attribute the intermixture to a far different cause. I shall indeed be surprised if desertion have anything to do with it, and have little doubt that it is really a case of hybridisation, the black queen having been impregnated by a Ligurian drone, and a mixed progeny being the natural result.

I had myself an amusing case of desertion this autumn. A second swarm with a few combs and about a couple of ounces of honey having been presented to me, I transferred the bees from their straw hive into a box partially furnished with combs. Although they appeared at the time to acquiesce in the change, they resented the interference by quitting their new domicile a few hours afterwards, and my garden accordingly presented the unwonted spectacle of bees swarming late in October. The queen having probably dropped from weakness in some obscure corner, the bees refused to cluster, and it was not until I had presented them with two other queens that they adopted one and permitted me to hive them—a woefully diminished cluster—in the box which they had quitted in dudgeon a couple of hours previously. The loss of the queen was otherwise of little importance, since deposed sovereigns were at that time nearly as plentiful with me as they were on the Continent in the memorable year 1848.

The tendency to fraternise with strangers which is occasionally manifested by bees relieved me from a difficulty last summer. A very strong stock sent from a distance reached me in a most

deplorable condition. Owing to want of ventilation, resulting from bad packing, every comb was smashed, multitudes of the bees were dead, and the remainder in a most lamentable state—few, indeed, being able to use their wings. Utterly at a loss what to do with the survivors, I opened the hive in my garden, luckily in the immediate neighbourhood of a small box containing a queen and a few hundred bees. In one minute the difficulty was solved. The few bees that could fly betook themselves at once to this little community, and stood with vibrating wings on the alighting-board. This hint was enough. I propped the chaotic hive in front of the small colony, and a living stream forthwith resulted, which had the doubly beneficial effect of strengthening the community to which they migrated and preserving themselves from destruction.

I am glad to learn that Mr. Lowe is about to investigate for himself the wonderful phenomenon of parthenogenesis in the honey bee, and shall be happy to assist him by every means in my power. Although he declares that several might be urged, I am not myself aware of a single loophole that has not already been most thoroughly explored and effectually stopped. Having, I believe, investigated this subject more thoroughly than any other Englishman, I may be permitted to indorse the conclusion of Dzierzon, who declared so recently as March last, "To me at least is this proof a strictly mathematical one, and so convinced am I of the truth of parthenogenesis in bees—namely, in drone-production—that, to speak like Brüning, I would lay down my life for this conviction."—A DEVONSHIRE BEE-KEEPER.

FEEDING IMPRISONED BEES.

I HAVE put rather a weak stock of bees into a chamber, and am feeding them with the "inverted bottle" at the top. The hive, which is one of Neighbour's, is shut up close, so that the bees are confined, except that they have access to a glass bell on the top. At times in warmer weather, when the glass in the hive is at 60° or higher, they seem to grow very angry, and swarm into the bell. Will this close confinement hurt or smother the bees, and when will be the best time to put the hive out of doors again? I have known a hive of bees tied up in a sheet and hung up in a room all the winter. Why are mine so restless?—B. B.

[We do not wonder at your bees becoming "very angry" under such circumstances. Feeding bees whilst in confinement is most injurious to them, and we should not be surprised to learn that yours are dead ere this. If they still survive, by all means give them their liberty without delay, and if feeding be imperatively necessary, keep a full bottle at the top of the hive. You will find they will appropriate its contents during mild days, and leave them untouched in cold weather.]

PROFITLESS BEES.

It is now many years since I began to keep bees, and I remember a very respectable seedsman telling me I could keep bees if I would feed them, but they would not keep themselves. I have kept them on the old plan in skeps on the Podolian plan, and these last four years on Payne's plan as in your "Bee-book for the Many." My bees are always so light in autumn, that I have to do as the seedsman said—feed them. I never saw stronger colonies than I always have, nor can any be healthier. They are not infested with insects or other enemies, and I seriously tell you I have spent upwards of £20 on bees, and during the course of my bee-keeping never had one ounce of honey from my bees. I never could induce any one hive to adopt either a glass or wood super. I keep them in a roomy beehouse of wood, where they are always quite dry, with a south-east aspect; they never fight or attack each other; the house will hold two rows of four one above another. I am quite in the country—all green fields and gardens around, with no manufactories of any kind for a mile and half. I feed them in the autumn with syrup, and in the spring with barleysugar. They are always strong, numerous, courageous, and healthy.

Can you tell me a plan to manage them so that I can treat my wife as the German Albert Braun, and how best to work them so as to keep always and only three hives through the winter? If so, you will greatly oblige, as I am now becoming tired of so profitless a pursuit.—T.

[Many amusing and edifying bee-stories have unquestionably appeared in our columns during the past four years, but none

appear to us so astounding as your own. Your ill-success must, we should think, be attributable to an indifferent honey locality, supplemented probably by some mistakes in management. Where you may have erred we find it impossible to say, but as the main object of bee-keeping is undoubtedly the procuring a return in the shape of honey, we should recommend you to go back to first principles, and, abandoning for the time all attempts at supering, &c., try the old-fashioned swarming system. From three strong stocks you may reasonably expect from four to six or even more swarms during the summer. A little trouble in weighing will tell you when these are at their heaviest (probably in August), then expel their inhabitants by driving, and apportion them amongst your three old stocks as recommended in pages 45 and 46 of "Bee-keeping for the Many." You will thus be able to treat your wife to some beautiful honeycomb, and contemplate with equanimity any trifling outlay for sugar (supposing it to be required) to provision your old stocks during winter. Any empty comb should be carefully preserved, and if inserted in your supers and glasses the following spring, will most probably overcome the reluctance which your bees have hitherto evinced to work in them. By thus going back, as it were, to rudimentary bee-keeping, and feeling your way upwards and onwards step by step, we have little doubt of your ultimately overcoming all difficulties, and even rivalling those amongst our correspondents who are able to exhibit their forty or fifty-pound supers of pure honeycomb.]

BEEES IN BUILDINGS.

I HAVE had but little experience with regard to keeping bees in buildings, but that little rather induces me to form an opinion adverse to the adoption of the plan of sheltering hives.

In the autumn of 1859, a large globe-hive was brought in from the country, and placed in an unused drawing-room, the bees working out through a slit under the window-frame about 20 feet from the ground. Here the bees remained the winter, no fire ever being lighted. In the spring they commenced breeding and working early, and showed symptoms of increasing population, as soon as any of my other stocks out of doors. But when the cold winds of March and April came, the ground and areas in front of the whole row of houses were daily thickly strewn with dying bees, so much so that my neighbours complained of them as a nuisance. Partly owing to their remonstrances, but chiefly to save the lives of the bees that were left, I removed the hive to the country, where it quickly regained its strength, and in June sent out a very fine swarm.

I have tried a hive in a greenhouse, but it never thrived satisfactorily. The house was elevated considerably above the ground, and I am inclined to think that this is one cause of failure. At the same time, I have known gentlemen, enthusiasts on the subject of bees, who have built costly structures of brick for their favourites, but they have not thriven in them. The reason why is by no means apparent, as every care seemed taken to insure success.

Bees will, however, sometimes thrive in holes in walls, or under roofs and ceilings of their own seeking. Mr. George Fox, of Kingsbridge, last season removed combs and bees of several colonies under these circumstances. In some of them he found a considerable quantity of honey, and in one the combs were nearly 3 feet in length and of considerable depth, several of them of this size being in juxtaposition. The bees had occupied these situations for many years. When their habitations are situated under slated roofs, and in other cold situations, I am inclined to believe that the bees usually perish in the winter, and that an early swarm repopulates the deserted combs. There was one such establishment, which, the owner of the mansion assured me, he believed to be so replenished every summer.

A gentleman in Ireland, a kind friend of mine, once asked me to remove an immense swarm of bees which had taken possession of a square open hole outside his stable wall. He had caused a front of wood to be fastened up against the open space; but as the roar of the bees was so plainly heard inside the stable, he was afraid of his horses, and wished the bees to be removed. Having properly protected myself with a bee-dress and thick gloves, I removed the board, which exposed an aperture about 1 foot square, by perhaps 9 inches in width. This was literally filled with bees. They were quickly brushed into an empty hive and tied-up, and I hoped that the queen and the entire swarm were in my possession, the owner having given them to me, if I could

carry them off. But great was my disappointment when information came from the stable, that the roar of the bees was to be heard louder than ever.

The true fact now dawned on my mind. The bees so lately secured did not constitute a swarm which had taken possession of the recess, but those clustering out from a colony which had its quarters in a narrow space between the ceiling and the floor of the loft above. The noise almost exceeded belief, and extended back for many feet, seeming to show that the combs occupied nearly all the space between the joists, running across the floor. Nothing more could then be effected, but it was agreed that on a future day, the flooring should be ripped-up and the contents appropriated. The bees confined in the hive were taken home, but, I need hardly say, perished, or deserted from the want of a queen. At that date (1852) I was not so well versed in the mode of supplying an artificial queen as at the present time.

After the foregoing operation, my host informed me he had something else to show, and we ascended to the leads of the flat roof of his house. He asked me to look down one of the chimnies, and a curious but beautiful spectacle met my view. At about 15 inches from the top of the chimney, which in that part was about 1 foot square, a swarm of bees had taken possession, building combs diagonally across the open space. The upper edges of the combs were totally unattached to any substance, so that the bees must have commenced building on the perpendicular brickwork of the chimney; yet were they most singularly regular in form. The bees were very thickly clustered level with the upper edges of the combs. The covering from rain or air was very imperfect, being a piece of slate which but partially closed the aperture, and which was put on after the bees had constructed a large quantity of combs. This stray swarm I was also asked to expel from its stronghold, and an early day was named for the purpose, but before that day arrived my kind friend died suddenly while walking over his grounds, and I never knew what was done respecting these two colonies of runaway bees.

Since writing the above the Journal has come to hand, and the letter of "A RENFREWSHIRE BEE-KEEPER" is before me. His experience in keeping bees under the circumstances, respecting which information is required by "A NORTH-STAFFORDSHIRE BEE-KEEPER," seems to have been much greater than my own, and would warrant your correspondent in adopting a trial of the plan; nevertheless, I am still inclined to believe that in a majority of cases the results will not be found altogether satisfactory. If kept in a garret at the top of a lofty house the bees suffer greatly from the wind. These rooms are also often intensely hot in summer. But the chief objection is one which is admitted by the writer of the letter before me—viz., the great improbability of saving the swarms which may issue. These almost invariably get away. It is very well to say the bees must be worked on the depriving system, but notwithstanding all the care of the owner, swarms will be thrown off occasionally from such hives. This entails no small loss, as these swarms are usually much above the average size. Where bees are kept at these elevated positions, it may be very probable that a northern aspect is best suited to them. The prevailing rough winds are south-east and north-west, often attended with driving rain. Northerly winds are seldom so boisterous (I am speaking of Devonshire now), and are drier; but the grand reason is that the bees are not so likely to be tempted out in cold windy weather with a bright sun, by which an immense mortality is caused among bees in hives facing south, or points east and west of south. That large quantities of honey are occasionally taken from runaway swarms which have established themselves in holes in walls and under roofs I have already admitted; but they form the exception, not the rule. In the great majority of instances, where I have known an assault made in these colonies, the result has been found sadly disappointing. Frequently the spoils have been calculated beforehand as likely to amount to one or more hundredweights, whereas the actual quantity obtained has been but 2 or 3 lbs., chiefly of black miserable stuff, which has been devoured by the boys and men gathered round to snatch what they could. That this does not altogether affect the question as to the housing of hives in a room must be admitted. I am glad the question has been opened. Doubtless our friend "B. & W." can afford us some of the results of his experience, which, if I mistake not, has not been small, on this matter.

It is to be hoped that your inquiring correspondent will give the plan a trial this coming season, and let the apiarian readers

of the Journal have the benefit of his experience. It is my intention to do so, if I can fit up a suitable room for the purpose, and whatever the result may be, I shall be happy to communicate it, and it will afford me very great pleasure to be compelled to modify the opinion here expressed adverse to keeping bees in dwelling-houses and analogous situations.—S. BEVAN FOX.

BEES IN CHURCHES AND OTHER BUILDINGS— THEIR DELIGHT IN RETIREMENT.

I HAVE long been convinced that bees are fond of quiet and retirement, having for some years watched their movements in secluded spots. The first colony I noticed was fixed in the end of a building at Willoughbridge Wells, near Market Drayton, Salop, the property of Mr. Meynell Ingram, of Temple Newsham, then in the occupation of his agent, the late Mr. Samuel Harding, and which building had in days of yore been occupied as a cock-pit, but was subsequently converted into more pious service and used as a chapel by Mr. Harding. I was informed the bees (which were 7 or 8 yards from the ground), had been there for years, and a more powerful colony I have seldom witnessed; but in the course of one severe winter they died, not without in the following summer another generation laying claim to and taking possession of the residence, there being no inmates to dispute their title thereto.

I was told by those who had noticed their movements, that they were several summers ere they became as formidable as the original tenants, but that they swarmed, pillaged, and destroyed as the decayed nation had done before them, and were in fact a standing menace to all the smaller bee-states for some distance round, as in the case of the bees at Hough Hall.

My attention was subsequently directed to several swarms which took up their abode in smaller buildings, but from some cause unknown they did not survive the winter, and having recollected that when a boy at the Acton Grammar School my attention had been drawn by the Rev. Mr. Wilson to some bees working over the porch (he himself being a close observer and ardent admirer of this interesting little insect), curiosity led me two years since to visit the scene of my boyish exploits, and there, to my astonishment, I found the bees in full work. Now, whether there had been any interregnum or not I was unable to learn, but the colony was of amazing strength. It is about 10 or 12 yards from the ground, the entrance being between the cracks in the stones of the church wall.

Since then I was told there was a colony of bees at Shrewbridge Hall, near this town, the residence of W. H. Hornby, Esq., the member for Blackburn, where, I believe, they had been for a dozen years; but I found some enemy had destroyed them, although Mr. Hornby's intelligent gardener seemed to think the domicile would be in the forthcoming summer tenanted again; the distance would be 8 yards from the ground.

There were several colonies in the trees of Doddington Park, the residence of H. Akroyd, Esq., which were carefully watched during the swarming season by the workmen for the swarms, but from inquiries made I was not able to discover a single colony left. They were generally fixed about 10 yards from the ground.

In Cholmondeley Park, the residence of Lord Cholmondeley; and at Combermere Abbey, the abode of the venerable hero of Bhurtpore and Salamanca, I hear of several colonies in the oak trees there, but the last summer having been so very unpropitious I was not able to follow up my inquiries.

Generally bees in this state are not to be approached with impunity, but the most extraordinary circumstance which has attracted my attention was at Sound Heath, near Nantwich. In the thick part of a walnut tree there is a strong colony of bees. This tree was originally growing at Wrenbury-cum-Frith, and was cut down last winter (and the fall of the tree would not be small), and its present owner obtained permission from the timber merchant who bought it to sever the portion of the tree which contained the bees and bring it home, a distance of three miles, when he placed it in his garden, having stopped-up all crevices.

When I visited the garden where it stands, this summer, I ascertained that the bees, which were then remarkably quiet and strong, had experienced no ill effects from the rough usage, and had every year previously sent out a swarm when the tree was growing, and it was stated to me they had had undisturbed

possession of their tenement for a dozen years at the least. Anybody acquainted with the particular odour emitted by very old families of bees could soon perceive upon approaching that it was one of considerable standing, and I came to the conclusion it was the age and toughness of the comb which had preserved the family from complete destruction, as the repercussion of the falling tree was likely to smash the contents to atoms.

Now, it strikes me that there were some of your numerous and able correspondents to take up the inquiry in the several parts in which they reside, we should soon hear of instances similar to those I have before narrated, as I read that in the year 1834 a swarm of bees housed themselves on the top of Chichester Cathedral, having taken up their quarters below the weather-cock; and I remember in the year 1850 (July), during one whole week the officers of Chester Castle were prevented from locking the gate leading to the little Roo Dee, and they were compelled to employ a whitesmith to remove the lock, when to their great astonishment they discovered a swarm of bees had taken possession of the lock, every ward of which was completely filled with honey and wax.

The height and aspect of bee-hives has for some time engaged my attention. My own are in a room well ventilated, S. by S.E., the entrances made of wood plugged in the wall 8 feet from the ground, well protected from winds, and free from noises of every description, but I am not in a situation to brag they do one bit better than those which are placed on a common bench uncared for. I, however, remember a friend who kept two colonies in his bedroom, working them through the window-frame, which did remarkably well for years, and he has been known to take a couple of eight-pound glasses from each stock, but the master and servants are now gone.

It is almost impossible to account for the singular places where bees will fix themselves. I have myself tried nearly all places, heights and aspects, but I am puzzled to find out a remedy to guard against the damp; and I am afraid our friend the "NORTH STAFFORDSHIRE BEE-KEEPER," will learn, as many have done before him, that no aspect or height will evade the penalty imposed upon us by that dread enemy, humidity.—ED. WYNDHAM JONES.

OUR LETTER BOX.

FOWL AND COW-KEEPING (E. M. D.).—You can have from our office, free by post, "The Poultry Book for the Many," if you send seven stamps with your direction. For thirteen stamps, you can similarly have "How to Farm Two Acres Profitably," which contains full directions for managing not only a cow but pigs.

SHELL-LESS EGGS (Nidus).—As the pullet has abundance of burnt shells, we think you feed her too highly, and there must be some inflammation or excessive irritation of the egg-organs. Do not give her Indian corn or animal food; but only barleymeal and boiled potatoes. It is very likely that those pullets which do not lay are over-fat.

GAME FOWL PRIZES AT KENDAL AND MANCHESTER (Fair Play).—More than one expression of reprehension of the decisions at Manchester have reached us, and we shall keep our attention fixed on certain facts. We would observe, however, that the classes at Manchester were generally more strongly represented than at Kendal; and we would further observe that no man should consent to be a Judge at a Show where a near relative is to exhibit. He may be honest, but his awards will be liable to bias, and certainly will be suspected.

PROMOTING LAYING (Susan).—Warm food is not absolutely necessary to make hens lay well, if by warm food is meant that mixed with hot water, or boiled and given before it is cool. The warmth should be the result of better and more nourishing food. Good ground oats mixed with milk, scraps of cooked meat, and an occasional handful of hempseed, are all good for the purpose. Any stimulating beyond this we hold to be hurtful.

QUANTITY OF FOOD REQUIRED BY FOWLS (A. B. M.).—Your question is difficult to answer. The quantity of food consumed will depend on the condition of the birds, and the manner in which they are fed. It is utterly impossible to say how much ninety-five head of poultry should eat. For instance, birds in low condition and coming from a bad home or run, will eat twice as much for a time as those that have been well fed, and are proportionably comfortable. We do not much approve your feeding. We would advise for Turkeys and fowls ground oats given by hand as long as they will eat them, for the Ducks and Geese whole oats. Where food is thrown down whether wanted or not, much will always be wasted; but where only a certain quantity is given just so long as they will eat with appetite, you will soon be better able to judge than we to inform you. You may vary the ground oats with some whole corn now and then.

PLEASANT HYBRIDS (Lex).—See an article in this week's paper treating of the subject.

THE SINGING-BIRD MANUAL (Bird).—It will be published this spring, and the price will be very moderate.

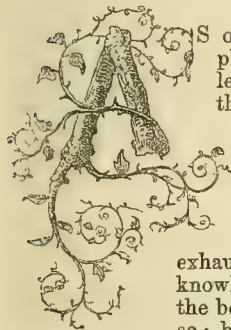
PARROT PICKING OUT ITS FEATHERS (Gertrude).—Put a soup-plate full of tepid water daily, where the bird can use it as a bath. If the bird does not bathe in it, pour tepid water over it through the rose of a watering-pot.

WEEKLY CALENDAR.

Day of Mnth		Day of Week.	FEBRUARY 3-9, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
				Barometer.	Thermom.	Wind.	Rain in Inches.						
					degrees.			m. h.	m. h.	m. h.		m. h.	
3		Tu	Hare's-tail Rush.	30.120-30.195	55-41	S.W.	—	38 af 7	50 af 4	rises	0	14 5	34
4		W	P. Amman died, 1693. B.	30.183-30.096	55-42	S.W.	—	37 7	52 4	2 a 6	16	14 11	35
5		Th	Cato died, 45 B.C.	30.010-29.945	56-39	S.W.	—	35 7	54 4	11 7	17	14 16	36
6		F	Dr. Priestley died, 1804.	29.941-29.921	50-29	N.W.	—	34 7	55 4	23 8	18	14 21	37
7		S	Alder flowers.	30.294-30.061	39-20	N.E.	—	32 7	57 4	34 9	19	14 24	38
8		SUN	SEXAGESIMA SUNDAY.	30.548-30.516	35-18	N.E.	—	30 7	59 4	47 10	20	14 27	39
9		M	Daffodil flowers.	30.527-30.516	40-30	N.E.	—	28 7	v	morn.	21	14 29	40

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 45.3° and 32.5° respectively. The greatest heat, 62°, occurred on the 9th, in 1831; and the lowest cold, 4°, on the 9th, in 1847. During the period 129 days were fine, and on 123 rain fell.

SHOULD NOT THE ROYAL HORTICULTURAL SOCIETY BE MORE NATIONAL?



One of our most learned philosophers very aptly remarked, "Knowledge is power;" and yet, although the most fertile brain digs deep into the mine, analysing and scanning its contents in a way which astonishes and delights minds of a more limited compass, its length, breadth, and depth are apparently as unlimited and in-

exhaustible as ever. The progress of knowledge is undoubtedly great, and the benefits accruing therefrom no less so; but look at the thousands working all in different directions in the explo-

ration of that mine, each excellent, and excelling in the sphere to which his talents are best suited, and then form an estimate of how little really the most erudite and painstaking individual efforts can achieve.

Co-operation, however, judiciously planned and energetically proceeded with, has effected much in assisting the development of science and art. It brings together eminent men, who interchange ideas and promulgate theories which are thoroughly agitated and discussed. It brings together a host of practical men, such as agriculturists and horticulturists, who often lend force to their argument by the excellent condition of the subjects upon which their skill has been brought to bear, and all in a way contribute to the advancement of knowledge.

Horticultural societies have done their share, it may be said, to provoke emulation in the art, for they are neither few nor far between all over the country; but their influence generally is comparatively circumscribed, and the benefits resulting therefrom are purely local. In fact, judging from the complaints that emanate even from disinterested parties, the majority of the prizes are monopolised by one or two individuals, who, by dint of extra energy, and extra accommodation, and other accessories, very often eclipse their less fortunate rivals. With all this the public in general have very little to do, because it scarcely resolves itself into a national concern. Such a monopoly has a tendency to damp the ardour of those who are anxious to win the way to fame, and has a dragging tendency in the onward progress of the art; although, let it be distinctly understood that our remarks are not intended to strike at the root of any of these societies, but rather to indicate the more palpable defects, leaving amendment to time and the experience of the district managers.

Again: There are societies centred in the midst of large urban populations, which exercise a different sort of influence upon the public generally and competitors particularly, because from their resources they are enabled to offer a much more tempting field to all and sundry, whether near to or distant from the place of exhibition;

and the prizes to be gained and the honour to be won, if there be numerous entries and all above mediocrity, are prizes and honour indeed. There are Birmingham and Brighton, Manchester and Liverpool, and the great gatherings at Bishop Auckland, Edinburgh and Glasgow, Dublin and Belfast, and some others of our large and populous towns, which by their wealth and population are enabled to frame schedules of a pretty satisfactory character upon the whole, and all in their circles give a considerable impetus to the progress of gardening; but nobody who knows the real state of matters will pretend to say that the whole gardening strength of the district is represented at these exhibitions. Even go to the great metropolis, where three great rival Exhibitions exist and prosper, and where remuneration and honour are at the maximum; and whether you are surprised or not, you will find, especially among the heavier portion of the articles exhibited, that the prizes go year after year to nearly the same individuals. In fact any one, even living at a distance, who has been in the habit of taking cognisance of the names of successful competitors in the great plant-classes, could almost foretell the awards.

In a word, then, the gardening strength of the country is not represented at our great exhibitions as it might, and as it would be if we had a national Horticultural Society correlative in character and operation to either of the Royal Agricultural Societies; because few, if any, noblemen or gentlemen in the country, who keep up large establishments and disburse considerable sums towards plant-cultivation, we shall say in order to satisfy themselves and their families in the first place, will be induced, year after year, to allow their gardeners to go to either or all of the London shows, supposing the chances were ever so good. It would be quite a different affair if there were a Society of a migratory character, infusing, as it would be sure to do, a spirit of emulation in all districts, where its influence would be more immediately felt; for district would endeavour to rival district in the aggregate amount and success of the undertaking, and once such sympathy and ambition were fairly enlisted, the success of the scheme would be placed beyond dispute, and horticulture would be immensely the gainer.

There might be something said about the difficulty in organising such a scheme—in securing sufficient influence to patronise it and take it by the hand. There might be a great many things said suggestive of failure both commercially and horticulturally speaking, for there are always a few croakers ready to preach the downfall of any and every innovation, let it be ever so politic. We have only to point to the amount of opposition and hostile criticism that the organisers and promoters of these migratory Agricultural Societies had to meet with in the first instance, and to call attention now to their triumphant success, which cannot be altogether ignored as a precedent, although a little different in kind. Of course, we shall be told that no society of such pretensions could thrive out of London—that there the wealth is, and there the population—and that, in short, supposing it were set a-working under the very best auspices with the view of

promoting the science and art, it would never be self-supporting—that its patrons would never be off the road begging for its maintenance, and, consequently, death would be the end of it. Time will only solve that problem in a satisfactory manner; but if such a rural spot as Bishop Auckland, with an active managing body can get up a horticultural show, which, we believe, is now second to none in the kingdom, that will induce, as was the case last season, upwards of 20,000 people to come and see it, what will those great commercial cities which we have named not do if called upon?

Let us quote one other example of a mighty kindred gathering. When the Agricultural Society of England held its Show at Leeds little more than twelve months ago, no less than 70,000 people went through the turnstiles in one day to see that Exhibition. And may we not argue that a Horticultural Society properly organised, which should command all the influence of the horticulture-loving community of England, would achieve an amount of success proportionately great, and that such a project most emphatically warrants, nay, even demands, the earnest consideration more especially of those who have elected gardening as their profession?

There is plenty of room for the inauguration of such a Society without disturbing the harmony and efficiency of any that is already in existence, and it would go far, as has been already hinted, to draw out those who have held aloof because they have either distanced all competitors who have entered the arena with them, or else they have considered the stake at issue unworthy of their notice, and the honour to be gained only of a local, and, therefore, of a limited kind. The press by this means would be enabled to bring before the notice of their readers a much greater variety of subjects. The number of prizetakers, too, would be much more diverse, and the value and honour of the prizes much more enhanced. It would incite a community of interests unknown even in metropolitan showing, and would have a tendency to draw closer the bonds of brotherhood. I have merely initiated the idea, and hope to hear your own and your readers' views thereupon.—JAS. ANDERSON.

[Our friends well know that we have long entertained the opinion that there is open to the Royal Horticultural Society that field of usefulness hitherto unoccupied, and now pointed out by Mr. Anderson—holding an annual meeting in some country district of England, similar in character to that held yearly by the Royal Agricultural Society.

If such a meeting were held at the season of the year when the gentry of England return to the provinces, and at places so distant from London as to allow gardeners to compete who have hitherto been precluded from exhibiting in London, the Society would confer a great boon; and at the same time a stimulus would be applied to the gardening of remote districts, not only by the intercourse thus secured, but by exhibiting produce which the amateurs in those districts had scarcely deemed attainable.

We do not attempt to propose a plan by which the idea could be brought into operation; but a Committee would soon make the necessary arrangements, and local subscriptions to sustain the project, would, we think, flow in plentifully.—EDS. J. OF H.]

CROSS-BREEDING GERANIUMS.

I WROTE the answer to Mr. Darwin so hurriedly, that I made a mistake or two, which might lead readers into greater errors. Thus, "I had a commission to work over, again and again, every experiment [for changing the colour of Peas] mentioned by Gärtner and Weigmann," and the absurd assertion of "Sageret," about crossing between the Cabbage and Horseradish.

I did not try over again all the experiments they put on record; at least, not under that commission. That was as far back as 1833, 1834, and 1835, and the conclusion was, that Dr. Weigmann was not even aware that the garden Pea could not be crossed by any other Pea or plant whatever, without artificial means, and very likely there is no want of such opinions at the present day.

From thirty to forty trials in each of those years, Gärtner's assertion that he changed the colour of a Pea by pollen was proved to be wrong, and yet he very probably had a different-coloured Pea in the mother pod as he says; and if so, that was caused by a natural sport, more than one-half, if not every one, of our present race of Peas being natural sports induced by cultivation probably. But, in some cases, the change would appear to be induced by some chemical constituent of the soil in which

the plants are grown, for I know a soil which will change the bean of the Scarlet Runner to a jet black three times out of five sowings, and, no doubt, many gardeners have noticed the same effect in this and in other seedlings of their own rearing.

Again, when I said *Pelargonium* "is not a natural genus," I meant not botanically, but for the purposes of the hybridiser, in its strict meaning—that is to say, that all the species of *Pelargonium* could not cross together without destroying *Erodium*, because there is a section of *Pelargoniums* in which the species are affected in the peduncle by the pollen, exactly as the species of *Erodium*, and the species of *Erodium* are as differently affected in the peduncle from those of *Pelargonium* as the affection itself is different from the more usual course of nature. In the "usual course" impregnation would seem to be only one single process, which it certainly is not in many plants.

To explain the affection to people who know little of such subjects, let me say that a truss of such flowers is like the foot of a Game cock; the claws are the peduncles, or stalks, which support the individual flowers in a head, truss, or bunch of flowers. When the pollen affects one of such claws, that claw is, as it were, paralysed, and is drawn-in under the foot of the bird, the nail on the claw being the flower, but it is then the seed part. Now, if the effect of the pollen reached the young seed, or ovum, and put life into it, the claw would, in time, be restored very gradually from the seeming paralysis to its natural position, which position would be gained just as the seed was fit to sow, but not just quite ripe for harvest. It is a very pretty phenomenon; but being as common to gardeners as covering cold pits, few of them care aught about it.

That way of drawing-in the claws under the foot one after the other as soon as each is affected by the pollen is peculiar to about two-thirds of the species of *Pelargonium* only. The other third of the species are differently affected, and in the same way as all the *Erodiums* are. With these, the *Erodiums*, the joint of the leg above the claws, or what you might call the ankle, would seem to be out of joint, and to pull up the claws, one at a time, straight up against the leg; and by the time the seed would be ripe each claw slackens from the rigid strain, and finally turns up to take the original spread-out form as the seeds become ripe. But without the pollen, the claws or peduncles would never change out of the original and natural direction.

Now, would it not seem the oddest of the doings of Nature to undo the joint of the footstalk of a flower as the first result from the effect of the pollen, if that effect merely passed through the style to the seed in a long tube, as it is said to do? But when you have five hundred wild species, and a multitude of seedling flowers, which go directly to prove the footstalk out of joint, or affected by pollen, although the seeds of none of that vast number of plants had been touched, or affected at all, the mind of man could hardly conceive a greater error in natural history than the way they say the pollen reaches the seed; and yet nine-tenths, if not all, the learned professors of botany of this generation believe that way firmly.

Lastly, when I said I obtained a real cross from "Scarlet Defiance, which is over fifteen years old; but I may be mistaken," I ought to have said that I believed Defiance was fifteen years old, though I might be mistaken about its age, not mistaken as to the cross, as the sentence might be taken to imply.

I would ask, in return, Has any gardener obtained a real cross from this Defiance during the last fifteen years, and if so, what is the name of the seedling, and who let it out? It may be of some use to cross-breeders to know the reason why I ask this.

It took me eight years to obtain that cross, and yet they say I ought to know all about such ways. Some years I touched over a hundred of its flowers without a fertile result, and yet I was quite sure the pollen took a certain degree of effect; for the footstalk of a great number of the flowers touched relapsed to the perpendicular downward position, but some did not, because the pollen I made use of was foreign to the kind.

If a plant is absolutely barren the footstalk cannot be thus affected; and when we say a plant is barren because we cannot force a seedling from it, we may be saying what is not the fact. Of one thing, I think, we may be sure in a seedling of *Geraniaceae*, if the peduncle yields to the effect of pollen—namely, that that seedling is not naturally barren, though we may fail to force it to seed. And that is what I wish that cross-breeders should bear in mind, and therefore endeavour by a change of treatment—such as a warmer or a colder climate, a different

soil, and a differently aged plant, with different degrees of health and strength in the plants—to obtain the desired cross.

Even should all attempts fail us, we may rest assured the cross is obtainable in some other locality or country differing from our own.

Then, if that be true of Geraniaceae, and I can see no cause to doubt it, there can hardly be a question about its not being an isolated fact in one order of plants only; although we cannot discern it in those orders where the process of fecundation is positive, or effected at one stage of the process.

I said, long since, that the surest way to effect a difficult cross in Geraniaceae was to subject the mother, previous to attempting impregnation, to a sudden check, and that was how I overcame the inertness of Scarlet Defiance, although I failed for seven years even by that move; but another move seems to have been equally necessary. The plant, for the eighteen months preceding the period of that seeding, was kept at, or as near, the starvation-point as could be without killing it; the poorest sandy soil, and the smallest pot to cramp the roots in, with no more water than to lift the leaves after they all flagged, was the treatment repeated through two summers.

The fact is, that plant was a giant sport, and it was necessary to reduce the giant to the level of its ordinary kindred before it could seed by the pollen of any one of them; and I have found it necessary to reduce it considerably in strength before I could seed it by its own pollen, which makes me anxious to learn if it has been found more easy to effect by any one else whose soil and treatment might be very different from mine.

I am supposed, by many, to know more about crossing than many others, which obliges me to be so much the more particular about everything I have to say on the subject. But every one of our readers who has a turn for crossing knows just as much about it as I do, for I know nothing of it which is not down in these volumes, and some may know much more of it; for all the cross-breeders over the country have, each one, their own peculiar breeds to work on, and, of course, every one knows something, practically, which no one else can know so well for the want of practice in that particular breed. One thing, however, we all know, and that is, how very little the best of us really does know about it. Depend upon it, there are scores who have never crossed twenty kinds of plants in all their practice, who can tell you twice as much about it as the most practical of us who have been at it all our gardening lifetime. They can do every conceivable turn in it without going out of doors; we, very little indeed, even if we devote our whole time to it. But the greatest difference between them and us is, that they can account for every effect produced, which enables them to foretell events in crossing; while we cannot reach farther than our experience places before our eyes. D. BEATON.

FLOWERS OF THE PAST SEASON.

PANSIES.

MANY are the conjectures and terribly magnified pictures which are presented to us from time to time, of the condition in which this "tight little island" would be if the Gulf Stream through any disturbing cause, were to be diverted from our shores. And, by-the-by, may we not say, in passing, that this is one of those things so little dreamt of by many, for which we ought to take shame to ourselves that we are not sufficiently thankful for those daily and unnoticed mercies which a gracious Father is ever bestowing? We have been enjoying a winter mild beyond description—we, perhaps, think too mild. We see our Roses pushing, buds of our Currants and Gooseberries swelling; and, as is our wont, we shake our heads, and only "wish we had a little sharp frost to keep things back," little considering what a boon this has been to those poor distressed souls in Lancashire, or to the large mass of still more destitute creatures who, in our great metropolis, are exposed to a depth of misery that Lancashire knows nothing of.

Well, the Gulf Stream has not deserted us, and we are, I hope, thankful. But what has that to do with Pansies? Nothing, except in the way of "a circumbendibus." That stream has deserted us in the south, and we are fain to look northwards now for the cultivation of this pretty spring flower; nor do I think that the position in which it is placed, or the manner in which it is disparaged, is either at all fair, or at all likely to advance its cultivation.

I am quite as sanguine as to the future of the Fancy Pansy

as any one can be. I believe that Mr. Dean, of Bradford, is likely to do wonders with it; but I do not therefore see any reason why the old love should be cast away. Then the Royal Horticultural Society has thrown its weight into the adverse scale by offering lower prizes for florists' Pansies than for Fancy ones—prizes, indeed, so small in amount, as, I fear, not to make it worth the while of any grower to send them. The whole meaning of this is, that a few persons have taken it into their wise heads that there is too great a sameness in Pansies; and that by the way of obtaining variety it is best to squelch them altogether. It is a somewhat novel doctrine; but perhaps people are becoming so very wise now-a-days that they must be drawn out of the old trammels. I grant that there is a great deal of sameness, but so there is in every florists' flower. Look at a collection of Tulips worth hundreds of pounds, or at one of Fuchsias or Pelargoniums: it is surely just the same thing there. The person who grows them can see variety. He will pay his money for new flowers which he believes in some one or more points to be better than others which he has, and his opinion is scarcely worth more than that of a mere outsider. Imagine the horror with which Sir Octavius Oldboy would regard you if, after taking you through a room rich with the plunder of Egyptian tombs, you were to say, "Dear me, Sir Octavius! these are all very much alike!" And do you not think, if you were merely a looker-on and knew nothing of the real merit of these images of "Pasht" and other Egyptian dealers, it would be rather more modest to hold your tongue? "Alike, sir! As much alike as you are like a monkey! Look here. Do you see this one is of bronze and that of earthenware? Look at the size of this compared with that; mark the peculiar expression in these eyes; and I can only tell you, sir, that if you have any that you think like these, I can very soon show you that there are differences which you cannot appreciate." "Well done," says your companion, "I think you caught it there;" and probably the result is, you have learned a lesson that may be of benefit to you through life. When any one, then, runs down a box of flowers because of their sameness, let him only have the owner standing by, and probably he will learn a lesson that may in the same way teach him to be a little more modest for the future. And, then, do the decisions of Judges falsify this notion? There were, for instance, four or five first-class certificates given to seedling Pinks this year. I think they deserved it; but I will undertake to place these in a box of twenty-four, and that not one of those who are not growers of Pinks shall be able to see the difference between them and other varieties in the same stand, while a practised eye will at once pick them out. So long, then, as amateurs are satisfied that the new varieties of any florists' flowers are of sufficient merit to warrant their purchasing them, and so long as constituted courts of appeal, comprising the most competent persons to decide on such questions, continue to give prizes and certificates to such new flowers, so long do I consider it to be simply an absurdity for complaints to be made of their sameness.

I have thus attempted to vindicate the Pansy from this charge, or at least to put it on the same ground as other florists' flowers, and indeed we might say greenhouse and stove plants as well—for where they are grown in collections the same charge may also apply, as, for instance, Ferns. Take any one division of these you like, and then see the minute points from which growers will determine that a difference exists, and the distinctions of the florist will not seem to be a bit more minute.

One must now say a word on the present position of the flower. Its admirers, are, I fear, becoming fewer than ever, the difficulty of keeping them through the summer having deterred florists from growing them. The last two summers have, however been favourable, and may, perhaps encourage others to try them again. Be that as it may, it is to Scotland we now look for new varieties—a fact most certainly more complimentary to the perseverance of the Scottish growers than to the propitiousness of their climate; for one almost wonders how they can not only withstand but overcome the terrible foes of cold, wet, and wind that they have to contend against. To one of the several firms who are in the habit of raising and letting-out new Pansies I am indebted for the opportunity of seeing a few of the novelties of last year—I mean Messrs. Downie, Laird, and Laing, of Edinburgh, and Stanstead Park Nursery, Forest Hill; and the following are the notes that I have been enabled to make. I see that they are again advertising a batch of new ones, amongst which a self named Masterpiece seems to be pre-

eminently distinguished. They have besides Ajax, Alexander Tait, Baroness, Leonard, Miss Hay Newton, Mrs. Wyllie, Thomas Martin, William Austin, and Carlos.

Albee Downie.—Light, creamy white ground, the belting rich dark purple; blotch dense and clear; shape beautifully round.

Charles Watson.—A very fine dark bronzy purple self, the petals very smooth and the shape good. This flower was awarded a certificate by the Scottish Pansy Society in 1861—a good proof of its value, as the Society is very chary of its certificates.

Elgaro.—Yellow ground, belting a bright bronzy purple. Distinct in its appearance.

Miss Berry.—Deep golden yellow, belted with bright bronzy purple; blotch very distinct and clear.

Miss Williamson.—Pure white ground, belted with deep purple; blotch dense and clear. A very nice flower.

Rev. Thomas Downie.—Deep golden yellow ground, deep bronze purple belting. An excellent show flower.

Telegram.—Yellow ground, deep purple belting. A large-sized flower of good properties.

Vesta.—White ground, belt moderately broad; colour rich purple; blotch and eye dense and good.

Wallace.—Deep yellow ground, very rich in colour, belted with broad deep purple. Of excellent quality.

William Merricks.—A very handsome flower. Ground colour pure golden yellow, belt rich purplish-crimson; blotch very dense.

These seemed to me the most striking of the flowers I had an opportunity of seeing; and I think any one may fairly add them to their collection with a good expectation of being pleased with them.—D., Deal.

CALANTHE VESTITA CULTURE.

THE principal object cultivators have in view in growing plants is the production of flowers, always, of course, excepting such plants as are cultivated on account of their beautiful foliage. Now if any one were to tell a lover of flowers how to grow them so as to double or quadruple the number of flowers any given plant could be made to produce, such information, no doubt, would be gladly and thankfully received. I think I am in a position to give such useful information to the growers of at least one species of plant—the above-named lovely Orchid, *Calanthe vestita*.

I had occasion lately to visit my young friend Mr. Abel North, gardener to T. Shorrocks, Esq., the Lodge, Ashton Mersey, near Manchester, and whilst there I, of course, had a look at his Orchid-house. Though an old grower of Orchids myself, and having visited at least nine-tenths of the collections of these plants in Great Britain, I cannot but confess that I never saw such a display of flowers on this *Calanthe* as I saw there. He had 12 pots, and each pot had on an average twelve spikes of blooms, most of them 3 feet long; I counted the flowers on one selected at random, and it had thirty-five flowers on it. So eager were the pseudo-bulbs to bloom, that many of them had two and some three spikes each, some even flowering from the side and top of the bulb.

They were growing in eight-inch pots of the ordinary shape. There were from six to eight bulbs in each pot. I inquired the means he used to obtain such successful results; and Mr. North, being no niggard, answered my queries very fully.

His pots during March, cutting-off all the roots, and uses the following compost:—One-third caky cowdung, two-thirds turfy loam and leaf mould, adding a moderate quantity of river sand, passing the whole compost through a coarse riddle; he then drains the pots effectually, and places a layer of what remains in the middle over the drainage.

In potting, the largest bulbs are chosen, and put in the pots at equal distances from each other. The smaller bulbs are put into large pots, and grown on till they attain the required size. No flowers are allowed on them till they are fully grown. But little water is given at first; but as roots and leaves are pushed forth more water is applied, and a liberal allowance of that element is given till the plants are in bloom, then the quantity is gradually reduced, and the plants allowed to go to rest for three months or thereabouts.

By following this method any one may be equally successful in blooming this winter, or, at least, late-autumnal-flowering

Orchid. Florists who grow flowers for sale would find it worth their while to cultivate this free-flowering Orchid for the purpose of making bouquets of its long-lasting flowers. It does not require a very high temperature, nor any very nice attention. Any ordinary stove would suit it well.

Like all other terrestrial Orchids it requires a period of rest, a period of growth, and a time to bloom. When at rest keep it rather cool—say from 55° to 60°—and just dry, but not parched so as to shrivel the bulbs.

I noted also in bloom a fine specimen of a good variety of *Dendrobium nobile* 3 feet high and as much through; also *Cypripedium insigne*, a remarkably handsome plant with ten flowers all expanded at once; *Oclogyne cristata*, with many spikes of beautiful pure white flowers; *Bletia Tankervilleæ*, *syn. grandiflora*, very strong, with fifteen spikes; and lastly, the old, yet handsome, *Zygopetalum Mackayi*, well bloomed.

The East Indian Orchids, I observed, were healthy, most of them showing several spikes of bloom, particularly *Ærides*, *Saccolabium*, and *Vanda*.

The collection is not large, but very select, and in most luxuriant health—a fact very creditable to the manager, especially when it is remembered that he has only had the charge of them for little more than two years, and never had the care of Orchids before. Let this example be an encouragement to all good, zealous, plant-loving gardeners never to fear undertaking the management of Orchids, if, like Mr. North, they are determined to spare neither time, labour, nor patience in the cultivation of this most interesting and singularly beautiful tribe of plants.

In the stove I observed many fine specimens of the better kinds of Ferns, which at this time of the year are more remarkable for their beauty than in summer, when there is more floral display.

The greenhouse contained some handsome specimens of New Holland plants—such as *Boronias*, *Pimeleas*, *Aphelexis*, *Epacris*, &c.

The whole place is neatly kept, showing industry and that test of good gardening—attention to minutiae.—T. APPELBY.

AN AMATEUR'S NOTES ON M. DU BREUIL'S SCIENCE OF TRAINING FRUIT TREES.

ON looking over, the other day, some Numbers of last year's *JOURNAL OF HORTICULTURE*, an inquiry for a book on the pruning of fruit trees caught my eye, and the answer it met with, to the effect that there was no special work to be had on the subject.

This vacancy in horticultural literature has been supplied from a foreign source. Our neighbours across the water, with the logical severity that characterises them, take a pleasure in reducing everything to rule—from the framing of a political system, it appears, to the formation of a Plum tree. No Englishman has the least wish to see our old Constitution, irregular as its growth has been, submitted now to the pruning-shears and cut to the approved continental fashion, whatever finish it may be promised in the process. But there are many who will welcome a logical treatise on gardening.

M. Du Breuil's book by some persons may be thought dry. It contains no rambling gossip, no friendly jokes, no superfluous illustration; but it has the merit of always keeping to the point, and the rare charm of lucidity. How is it that an amateur finds it so difficult to master the various minute directions with which treatises on gardening abound—a difficulty so great as to deter many of us from all further researches into the matter? I believe it will be found mainly owing to the want of this same logical precision in the writers. Even Mr. Rivers—whose genial temper, evident freedom from professional jealousy, and liberality in unlocking to us amateurs some of the arcana of his art, attach to him every one interested in gardening—does not, it must be confessed, write plainly. How many times had we to refer to his book to ascertain the number of inches to be pinched off this branch, or off that—in this month or that—on this kind of tree or that—whether it were two, three, or four, we never could remember until we had learnt elsewhere *why* they were pinched at all. How much more intelligible the teaching which first gives the principles and axioms of the science, the habits of the tree, and the laws that govern them, and then on this basis rears the superstructure of practical directions. There was a well-known tutor in a certain university, who used to say that he could never remember anything unless he had a peg to

hang it on. In gardening we have hitherto been allowed no pegs to carry our memoranda, which, in consequence, are found sadly mixed together in the pocket when needed for use.

M. Du Breuil's treatise, therefore, appears to me to deserve a hearty welcome, if only as a step in the right direction. Whether his easy dictum will stand the test of experience remains to be proved; but the calm and dignified composure of his tone, his simplicity and brevity, seem to elevate horticulture into the rank of the exact sciences.

An instance of this lucidity is his practice of invariably distinguishing the pruning necessary for the formation of the tree from the pruning which is intended to insure the annual crop of fruit. In most treatises we find one set of directions for pruning the Apple, and another for the Plum; but no division of this kind, although the two kinds of pruning mentioned above are most distinct in their aim and object.

M. Du Breuil's favourite trees seem to be the Pear and the Peach. For the Pear he describes at length six modes of training. "The pyramid," which by the way, is twice the height and size of the tree with which Mr. Rivers has made us familiar; "the goblet," fitted for windy gardens; "the cone," or cypress-shaped tree, which seems to be a pyramid with less strongly-developed branches; "the Verrier palmette," which may be described as a horizontal espalier with the termination of the branches carried up from a horizontal to a perpendicular position, each lower branch being outside, and in its angle embracing the branch above it—the shape one sometimes sees in the arms of a candelabrum. This is intended for the wall, and takes fourteen years to complete.

Then comes "the cordon oblique," which has been already described in Mr. Bréchant's interesting *brochure*, in which the trees run up the wall at an angle of 45°, presenting in their closely-spurred and rounded form some distant resemblance to a cable. Lastly, we have the "double contra espalier in vertical cordon," which, if its name does not frighten them, will, we think, win the favour of many a cottage gardener.

Imagine a double row of Pear trees, each a slender stem of 9 feet high, the rows close together, 6 inches only between them, while the trees are planted zigzag, that one row may not shade the other. Twelve inches separate tree from tree in the row. Thus each tree has a radius of 6 inches for the utmost limit of its branches; a leafy cable 9 feet in length, thick set with spurs and fruit-buds. The trees are secured from wind by strong posts sunk into the ground at every 20 feet, and connected together by fencing-wire. This wire steadies a nine-foot lath to which each tree is fastened. Copper wire, it strikes us, would be lighter than a lath, and shade less. What a picture in autumn this lofty, leafy wall studded with yellow fruit! How safe from wind! how easily protected in spring! It is twice as fruitful as "the pyramid," the author assures us, comes into bearing in half the time, and attains its perfect form in six years.

But this wall of foliage will not be complete without the low edging which M. Du Breuil wishes to see accompany it on either side. About 1 yard from its foot he carries a dwarf hedge of Apple, formed by a single rod running horizontally 18 inches from the ground, and pruned as a cordon. The trees that nourish this rod are planted 5 feet apart, and bent horizontally, till the stem of one overtakes and touches its neighbour, into whose stock its extremity is then inarched. In this way, when the line is complete, the sap flows continuously through the whole, and the closely-united brotherhood become an exact emblem of the strong ministering to the necessities of the weak. These are also held in their place by low posts and fencing-wire.

The directions for Peach-tree training are quite as minute. He equally admits only two methods for this tree, "the cordon oblique," and the fan-shape reduced to the exactitude of a mathematical system. The illustrations here, and, indeed, throughout the book, are profuse, evidently copied from living specimens, and in every way admissible; they add greatly to the value of the work.

Standard Peaches in orchard-houses he does not contemplate. But much of great service to the orchard-house cultivator may be learnt. It is not uncommon, for instance, to find the laterals on a too-luxuriant Peach producing 3 inches of bare stem without a bud either upon it or at the base. For this evil, which will throw next year's wood too far "from home," M. Du Breuil has a remedy. By suppressing all flower-buds at the winter pruning, and half-severing the lateral at its base, he compels it to emit wood-buds there.

Here is another wrinkle. It is known that a fruit-bud may be

grafted in August on the Pear, and bear fruit the following year. M. Du Breuil tells us that this graft has the extraordinary effect of making all the fruit on the branch above it larger than they would otherwise be. He compares it to the effect produced on fruit by an annular ring taken off the bark—a method applied, I believe, by English gardeners to branches of the Vine.

At page 156 is a statement which will cause, some surprise. "It may be thought that the blossoms upon these small branches unaccompanied by a wood-bud, must prove sterile, and ought to be cut off at pruning, as though of no value. Quite the contrary, however. Experience proves that these blossoms produce the finest fruit." And he straightway recommends the shoot to be cut above a fruit-bud, although there are no wood-buds upon it anywhere except at the base.

Those who send fruit to exhibitions will be glad to learn that it is possible to administer a tonic to the objects of their anxiety, and that they are very much the better for a solution of sulphate of iron.

The several plans for equalising the growth of the tree, reducing the gross, and invigorating the feeble branches, will be found interesting. Trees are capricious, and will have their *enfants gâtés*, favourite gluttons, and rude robber-shoots; but none are allowed to remain in the well-disciplined *gymnase* of M. Du Breuil. "*Suaviter in modo, fortiter in re*," is his motto. Without the least harshness, but by the never-failing, almost imperceptible pressure of a dominant will, the plethoric rebel is brought into order, and made to abate his pride. His head is bent on one side out of the way of the stimulating sap, or the foliage which matures it for his uses is half clipped from him, or his spirit is tamed by pinching, or his heart broken by being made to carry all the fruit, or he is hampered by imprisonment and close nailing, while his poor brother wantons in the wind; or if the worst comes to the worst, a dark hole formed by an overhanging shutter brings him to his senses, and all the while his sickly brother is made much of, petted with a tonic, encouraged by the best places, and allowed to run riot as he pleases; till he is strong enough to match his rival, and win his fair share of the maternal juices.

The translation is tolerably executed; but in another edition, which will certainly soon be called for, it will be well to avoid such gallicisms, as "extension," used throughout the book for last year's growth, and "anticipative" bud (page 69), which seems to mean wood-bud. Some obscurity is caused by the use of the word "branch," which in common English is used to denote a shoot of some size, but here is applied to small shoots, spurs, and even embryo fruit-buds.

How are we to understand the following (page 175)?—"When the shoots of the successive branch extensions have attained a length of about 3 inches, suppress only the buds behind; then the double or treble buds;" which after some study we take to mean, "when the shoots from last year's wood have attained the length of 3 inches, suppress the shoots behind the branch, and also the double or treble shoots."

At pages 72, 138, 160, 178, and 180, other errors have caught our eye. Are we to suppose, too, that the cost of copper wire is so great in France, as to make a wire trellis amount to 5s. per square yard, which is half as much again as the cost of the wall in an English stone country?

We are left in the dark as to what are Mr. Wardle's contributions to the present edition. His remarks are sometimes imbedded in the text, and sometimes are found in footnotes. It would have been better if they had been confined to the notes altogether. We should then have had M. Du Breuil's directions fitted for a southern climate, and the necessary qualifications and adaptations to our own in notes. As it is, we do not know at times whether we are listening to the opinions of M. Du Breuil, or those of his translator; and, on the other hand, some statements that need explanation in England, as, for example, that Apple trees suffer from heat, are left as they are.

But these are minor blemishes easily removed, and all who love the fruit garden are indebted to the writers who have brought to their notice this well-considered and scientific treatise.—WYESSIDE.

BEURRE SUPERFIN PEAR.—This Pear has kept with me wonderfully well this season. I have still (Jan. 23rd), five fruit left. I am not sure I had any ripe in September, but I had it through October, November, December, and a few in the present month. Can this be said of any other good Pear? Those that

have kept till the present month have been small and medium-sized. Some of the fruit have been much richer in flavour than others, and most delicious, and when at its best I believe this fine Pear to be beaten by none, and equalled by very few.—E. B.

PLACES OF PUBLIC RESORT.

SUNDERLAND PARK AND WATERWORKS.

The great facilities now offered for travelling by the many lines of railway by which the country is intersected, and the opportunities thus afforded being in so many cases taken advantage of, the necessary interchanges of ideas, customs, or habits in the communications of one class with another, are tending fast to remove local peculiarities; and the customs of remote districts are certainly becoming modified through the instrumentality of the young people, and probably through some of the older ones too, who have travelled for information. True it is, nevertheless, that local circumstances must ever maintain a difference. Cornwall and Cumberland, though both hilly, differ widely in their vegetation, climate, and other features; Norfolk and Derbyshire cannot be compared together. There is, however, one thing in which all seem to agree, and that is improvement. Some of the customs of bygone days may still be held up as golden rules, but there are great numbers of them open to improvement; and one of the best tokens that all the advances in the various departments of industry have not been made under the grovelling spirit of tending to individual gratification, is that the public at large have been thought of; for in most of our large towns public libraries and reading-rooms have been thrown open to all classes, while museums and other sources of intellectual cultivation have been enriched by many and often well-directed endowments.

Other and by no means the least useful of all the places of public resort are parks or pleasure grounds of easy access to all. Doubtless the immense advantage of the London parks to the densely populated districts by which they are surrounded led, in the first instance, other large towns to attempt something of the same kind; but some of the first steps that way were certainly much in advance of the times—such, for instance, as the Arboretum at Derby, which, however worthy, as it doubtless is, and ever will be, of the munificence of the donor, is nevertheless bordering on a higher standard of arboriculture than the million are yet prepared for. Something equally pleasing to look at and easier to comprehend is what is wanted by the generality of our park-strolling company. But the gratification of the latter is by no means so easily accomplished as it was twenty years ago. So many gardens of the very highest class and best keeping having been thrown open to public inspection during that time, the public taste has risen to a degree bordering on fastidiousness; and Criticism so rife on public gardens, parks, cemeteries, and such like places, that unless a considerable amount of taste and skill be exercised in the formation of anything fresh, woe be to the unfortunate individual on whom the public displeasure will fall. Nevertheless, with all the vaunted knowledge which is to be attained by existing examples, now and then serious blunders are made.

The Great Exhibition of 1851, which had no precedent to guide its managers, was nevertheless an acknowledged success in every respect, while there are certainly some very grave errors in the present one of 1862. The building and its fittings cost very little short of three times what the Crystal Palace did, yet everybody admires the cheap one, and condemns the dear one as supremely ugly. The builder doubtless expected his large domes to attract attention; but John Bull does not care for glass domes—their inutility is transparent. In truth, it is the fact of being able to see completely through them from the outside that offends the eye and diminishes their size; and yet from the cost of the building it is only fair to suppose that these two huge glass domes, about which the public do not seem to care a pin, cost as much as the whole building of 1851.

There are many opinions, too, on the Kensington Horticultural Garden; but censure here has certainly in many cases been unjust, for in so small a place, and surrounded as it is by myriads of chimneys, it would have been utterly impossible to have given it the sylvan scenery some writers pant after. Architectural, sculptural, and other artificial ornaments were almost all that could be adopted: therefore I can find but little fault with it except in name. It is certainly a misnomer to call it a horticultural garden at all, when perhaps not more than fifty or say a hundred species and varieties of plants are cultivated in

it. Plenty of cottage gardens belonging to humble labourers could furnish a more respectable array of names. Failures, however, are as useful monitors as successes, and tend by comparison to enhance the value placed on the award of public approbation.

The course of public opinion on matters of interest in which it is concerned is, nevertheless, sometimes carried on to a mischievous length, and factious opinions instead of conscientious ones are often enough put forth; even great societies are sometimes the means of deceiving the public. Fortunately the freedom of opinion is accorded to all, and this in some measure secures us against great mistakes. And, as the will of the mighty public is more potent than that of most mighty men, most of our public undertakings are the subject of more care and anxiety on the part of those who execute them than private undertakings are. Great taste is often shown in buildings and other works that are far from costly, and some public parks or gardens will vie with those of any nobleman or even Royalty itself. Where is more variety collected into a moderate space than is shown at Birkenhead? Other places are rising into fame, while some, which from their natural disadvantages can never be expected to occupy a prominent place in cultural matters, are, nevertheless, equally important for other reasons which render them at all times pleasing and agreeable, if not also instructive objects of interest. Such a place is Sunderland Park, of which the following short description may, perhaps, suffice, since the general bearings of such places have been more extensively treated of.

SUNDERLAND PARK, generally so called, occupies an elevated position immediately adjoining the southern edge of the town. Originally it was a quarry, and it was on the waste stone and rubbish that the formation of it had to be carried out. The southern side of the plot showed the face of the rock where the workings had been left off, and this, being some 40 or 50 feet high, forms an excellent feature in it. The high and bleak situation of the whole, and its being only about half a mile from the seashore, precluded all chance of cultivating many of the shrubs and plants often found in more genial situations; but the formation of the ground, the excellent walks, and the annuæ, creepers, and such shrubs and trees as will withstand the chilly blasts of the German Ocean, gave to the whole an air of neatness I was hardly prepared to find in such a place. The ground that had been excavated and been left in irregular heaps, had been in some degree altered, not by levelling but by increasing the size of these mounds and in all cases rounding their tops. Curved walks of a beautifully grey-coloured stone-shatter, hard, firm and smooth, wound along the valleys in various directions; and what appeared well worth copying in other public gardens was, that in most if not in all cases the walk was in so deep a cutting that the sloping turf edges could not be walked on, while at the same time they were so nicely adjusted to the walk as to leave the latter of a regular and uniform width and a faultless outline. All who have had public walks to deal with, well know the anxiety of so many to walk on the turf and its consequent wearing away, but here I did not see a single gap or blank—in fact, the steep character of the edgings made it difficult to set foot on them.

Some of the mounds were capped with clumps of shrubs, but the ungenial climate was fatal to most of these. In the more sheltered recesses they were a shade better, and some at the base of the rock promised to grow up; but it was evident only a few of our general garden favourites were able to endure the keen sea air. Of the most healthy were *Cotoneaster microphylla*, some Ivy, Poplar, Vine, and other things, but I do not remember seeing the Tamarisk, which certainly ought to do in such a place. But the great beauty in summer lies in the annuæ, of which there was an excellent assortment and all in a thriving condition; while in winter the beautiful dryness of the walks, the rock with its perennials and creepers, and the excellent turf by which the whole of the space not occupied by walks or beds is covered, will give it always a cheering aspect. Amongst the annuæ occupying the very highest part of the ground, were excellent French and African Marigolds, Stocks, Delphiniums, Dianthus, Calliopis, and other popular annuæ; and hanging from the rock were Sedums, Saxifrages, Wall-flowers, Ivy, Nasturtiums (which by-the-by I also saw in another place not more than a stone's throw from the ocean), Vines, and, what I believe would do very well, *Cineraria maritima*. In the bottom and in a more sheltered position were some beds of Scarlet and other Geraniums, Verbenas, Calceolarias and other

bedding plants in tolerable order; but annuals were the most gay at the beginning of October. It ought also to be mentioned, that a bronze statue, said to be of great merit, of General Havelock, whom Sunderland claimed as a townsman, occupies the highest part of the ground; near this is also one of those trophies so often met with in towns of less note—viz., a Russian gun. The Havelock monument is, however, well placed, and is said to be a good likeness of the hero, and the view from its base is very fine. A forest of masts is seen over the tops of the houses in the foreground—further off the glittering ocean, dotted here and there with specks of human handicraft slowly making their way to their destined port; and the town itself, though less ornamented with church-spires and monuments than some of more ancient date, is seen to possess few of the dirty narrow lanes and slums which disgrace so many cities of more renown.

A peep at another public work will show that mere utility need not necessarily banish the beautiful, for in this both are combined.

SUNDERLAND WATERWORKS.—It is not usual that this class of undertakings is in any way connected with gardening matters, but the managers in this case have given their works such an ornamental character in the gardening way as to entitle them to notice—in fact, the floral beauties and good-keeping of the place make it a fashionable resort for those who do not object to a walk of a mile and a half from the town, and that mostly up-hill, for the waterworks are on very elevated ground, commanding the highest buildings in it. The salubrity of the air is great as well as the excellence of the water, to obtain which a steam-engine is at work lifting one hundred gallons each stroke, and that twelve times a minute, and yet the noise is little, and of dirt there seems none. Very large basins of the crystal fluid, in which very small objects may be seen 12 feet deep, are surrounded with terraced walks, and these are bordered with turf-edging kept scrupulously neat, while the vacant ground is carved up into slopes, flower-beds, and borders, with groups of trees near the entrance.

Near one of the boundary-walls, which was covered with Roses and some Ivy, were groups of the most fashionable bedding plants of the day. Petunias seemed to do better than near London; *Lobelia speciosa* was flowering very well; while *Geraniums*, *Verbenas*, *Ageratums*, and *Calceolarias* were pretty good; and *Gazanias* remarkably so. Amongst annuals were *Saponaria*, *Asters*, *Stocks*, *Phlox Drummondii*, *Mignonette*, and French and African *Marigolds*, with some few patches of *Gladiolus*, all in good keeping; and in an out-of-the-way corner I noticed some common *Primroses* bedded-in under trees, doubtless to be brought forth for winter decoration. Amongst shrubs were some rather promising *Yews* and *Ilexes*, and the excellent keeping of the whole reflected great credit on all concerned. To my mind the raising of 1200 gallons of the purest water per minute from the bowels of the earth was not the least imposing feature, and the machinery seemed neither bulky nor noisy. The Directors in making their grounds so ornamental deserve the thanks of all, and it is to be hoped they will derive other and more substantial advantages as well. J. ROBSON.

VINDICATION OF GÄRTNER—EFFECT OF CROSSING PEAS.

In my last communication I said that Gärtner had proved that the colour of the Pea in one variety of the garden Pea may be changed by the direct action of the pollen of another differently-coloured variety. Mr. Beaton authoritatively remarks on this: "Gärtner never found that—he only asserted it; and when he was pushed to the proof he lowered his sails, made a second edition of his great work, and confessed many of his errors." He adds, "No cross-breeder of any practice in England at the present day would like to have his name associated with that of Gärtner for or against any exploit in crossing."

I should have taken no notice of this, although I should be sorry to lie under the imputation of having made an entirely incorrect statement, and although it is not pleasant to be flatly contradicted; but I wish much to be allowed to endeavour to vindicate the memory of one of the most laborious lovers of truth who ever lived. It is painful to see a long life of honest labour repaid by contumely from a fellow-experimentalist, who, I suppose—anyhow I hope—never read one page of the great original work—namely, the "*Bastarderzeugung*," published in 1849, a mine of wealth to all who will explore it.

Gärtner, when young, and at the very commencement of this long work, committed a very foolish action; he crossed a

number of plants belonging to distinct genera without having taken due precaution to exclude insects, and when he found their capsules full of seed, he thought that he had succeeded in crossing them. With the enthusiasm of a beginner he most unwisely published the result, and to this first paper Dr. Herbert has alluded with proper blame. When Gärtner found his seedlings came up pure, he, like an honest and excellent man (as all who knew anything of his life will admit that he was), publicly confessed his error.

Gärtner's great and last work, entitled "*Versuche über die Bastarderzeugung*," contains in 790 closely-printed pages the detailed results of nine thousand distinct experiments in crossing, together with admirable observations on the whole subject of hybridisation. This is a greater number of experiments than, as I believe, have ever been published by any other man, even by Kölreuter, and a far greater number than those published by Dr. Herbert. One great superiority in Gärtner's work over those of Kölreuter, Herbert, and others consists in his having actually taken the trouble to count the seeds in the capsules of every cross and hybrid which he made. He kept an exact record at the time of making each experiment; and this I have reason to believe was not done by Herbert, and certainly has been very far from the case with other English experimentalists.

I cannot resist here mentioning—as some who honour, as I do, the memory of Dr. Herbert, might like to hear the fact—that I have reason to believe that the last words ever uttered by Herbert were on his favourite subject of crossing. I called on him in London, and saw that he was very feeble. I wished to leave him, but he stopped me, and talked with much interest on this subject. An hour or two afterwards, as far as I could judge by the published account, he was found dead in the chair in which I left him.

But to return to the Pea-question. An account of the various crosses made by Gärtner (he selected the most constant varieties) between differently coloured Peas, with the results given in detail, will be found at page 81 to 85 in his "*Bastarderzeugung*." Gärtner was led to try these experiments from doubting the accuracy of Wiegmann's statements, and he found many of them incorrect; but he was compelled to believe in the Pea case; not that Peas can be crossed with Vetches, to which other statement of Wiegmann Mr. Beaton alludes. I may add that Gärtner knew of the account, published in vol. v., pages 234, 237 of the "*Transactions of the Horticultural Society of London*," on the influence of pollen on Peas. In an old volume of the "*Philosophical Transactions*," vol. xliii., page 525, there is a full account, with every appearance of truth, of Peas in adjoining rows affecting each other. The Rev. M. J. Berkeley has, as I have been informed, subsequently to the publication of Gärtner's book, tried again the Pea-experiment with the same result. —CHARLES DARWIN, *Down, Bromley, Kent*.

GOOD-GRACIOUS PANSY.

WE observed in your issue of 20th inst., a letter of protest against the name given to the Double Pansy now offered for sale by us, and we shall feel greatly obliged if you will insert the following in reply.

The plant was submitted to the notice of Mr. Beaton, and spoken of by him in No. 66 of your Journal, page 248, under the name of "Good-Gracious" as follows:—

"The 'Good-Gracious' Double Bedding Pansy was sent in the name of Messrs. Carter & Co., and had a first-class certificate from a flying quorum of the Floral Committee, for they all seemed on the wing; but besides the Sub-Committee, who were appointed to do the honours of the Summer Shows, there were the Chairman, J. J. Blandy, Esq., and the Rev. J. Dix, who take the Chair in turns; the Secretary, Mr. Moore, and a lot of us; and we were unanimous in the award. Many ladies also seconded our resolve; and you may expect it next spring as cheap as it is good. But I have not yet had its genealogy, further than that it is a Devonian.—D. BEATON."

When we gave the plant the name of "Princess Alexandra," we had forgotten that Mr. Beaton had already introduced it to the notice of the public in the pages of your Journal under the name "Good-Gracious;" and not wishing to confuse the public by offering the same plant under different names, we of course reverted to its originally-published cognomen. We do not, however, wish it to be inferred from the foregoing observations that we agree with your correspondent's opinion, and desire to

throw the presumed blame upon Mr. Beaton: far from it. The name may be inelegant, and that is the only objection to it. To say that "Good Gracious" is a profane expression is simply absurd; and who that was not morbidly sensitive would ever dream of attributing blasphemy to it? We entertain the highest veneration for sacred subjects, and for their professed exponents, and we must say that in our humble opinion both have been, to say the least, unnecessarily brought forward in this matter by your correspondent.—JAMES CARTER & Co., 237, 238, *High Holborn, London.*

[Having now published the objection that some of our readers take to the name of "Good-Gracious" applied to a flower, and having also published what Mr. Beaton and Messrs. Carter have to say in its defence, we will close the controversy, so far as our columns are concerned by observing, that though we do not consider the name profane, yet it approaches too near to the vulgar to be a desirable name for a flower. There is but a shade of superiority in "Good Gracious" over "Oh, my eye!" which would not sound pleasantly though applied to a very wondrous Rose.—EDS. J. or H.]

ROYAL HORTICULTURAL SOCIETY.

HIS Royal Highness the Prince of Wales, feeling "that he is contributing towards carrying out the wishes of a beloved parent, that the memorial of the Great Exhibition of 1851 should be inaugurated with every circumstance of honour," has consented to inaugurate the memorial on the 5th of June next, being the anniversary of the opening of the Royal Horticultural Society's Gardens in which it stands.

At the anniversary Meeting on February 10th we understand that Sir Daniel Cooper, Bart., the Rev. Joshua Dix, and J. Kelk, Esq., will be proposed as new members of the Council; William Wilson Saunders, Esq., as Secretary in the place of Dr. Lindley, resigned, and who, we believe, will be proposed as a Vice-President in place of the Bishop of Winchester, who retires; and John Clutton, Esq., as Treasurer.

ABUNDANCE FROM A SMALL SPACE— BROCCOLI CULTURE.

It is a very popular notion, that one requires a considerable degree of insight into the mysteries of the art of cookery to be able to boil a Potato well, and yet no vegetable is more generally and extensively cooked than the Potato. It is profitable as a crop, easy to cultivate, and generally liked, so that almost everybody makes use of it. Thousands cook and eat it, and yet it is only a good cook who can boil a Potato well.

Again: Who being in possession of a plot of ground does not try to cultivate one or more of the numerous tribe of Cabbage-works? Yet for all that, it requires a very skilful cultivator to grow any of the Cabbage tribe well under the numerous difficulties which many gardeners find in the way. I do not mean to imply those who have space, for then the principal difficulty is removed. Provided there is sufficient labour and space, the difficulty of keeping up a supply of vegetables is not great; the ground can lie fallow for a short time, provided one crop is off before it is time to put another in, and all may go on comfortably. This is not the case with regard to small plots which are sometimes devoted to kitchen crops, and which are often made to produce as much as gardens of much larger dimensions.

I do not intend to speak in any way disparagingly of those who cultivate vegetables on four or five acres of ground, that being the size of the kitchen garden; but I do mean to assert, that more credit is due to him who manages to supply a family with vegetables all the year round from a quarter of an acre of ground. In fact, I have known this done when the same extent of ground has been thickly planted with fruit trees and bushes. How it is done it would be difficult to describe; but it can only be by careful watching and untiring industry, managing so that one crop shall be half grown before another is done with; that what is lost during the growth of one crop shall be replaced; and that the ground shall be kept exceedingly rich and fertile while its resources are severely drawn upon: and, perhaps, here is the main secret, for it is a fact that the handling of stimulants is a very delicate matter.

When soil becomes thoroughly exhausted it appears to become filled with minute organic forms, which seem injurious to the growth of garden crops. The endeavour to enrich it often

increases the evil and sours it instead. Many swarms of grubs may be traced to the manure applied, and plants may be easily destroyed by manure given in a liquid state; and it requires some considerable practice to be able to know to a nicety just what plants require, and to give no more.

It is in consequence of this knowledge that many gardeners, who are otherwise unknown, are able to achieve much with very limited means—a talent for making the most of everything so that there is no waste.

It may appear like stretching the matter to say, that two or three dishes of vegetables and salads every day in the year—all kinds of fruits, as Apples, Pears, Plums, &c.—all kinds of wall fruits, bush fruits, and Strawberries—can be supplied from a kitchen garden of little more than a quarter of an acre. It is nevertheless a fact, and probably the details would be worth knowing if they could be made intelligible. It is not, however, my intention now to enter into details even if I could, but to make a few remarks on the culture of Broccoli—one of the most useful classes of vegetables that can be grown, especially for winter and early spring use. Yet Broccoli is a most exhausting crop, and does more towards impoverishing the ground than any other, and where it is continually grown requires some management to make it sufficiently productive. The question is, therefore, not so much how to grow it, as how to grow it profitably on the same spot year after year, and at the same time to obtain other crops from the same ground every year also.

If ground is to produce so much more than the average it will be necessary to make good the loss sustained; for this is not usually done in the ordinary method of wheeling manure on to the ground and trenching it in as the crop comes off.

Everybody who writes about kitchen-gardening makes it a point to urge trenching as a matter of the greatest necessity. The fact is, I think, this is too often overdone. It is not always good for plants to root deeply into the soil. If a tree forms a tap root and goes deep into the soil, it is generally an unfruitful one; and if a Cabbage or Broccoli roots deeply, it runs to leaf and stalk, but makes a very poor head.

What is wanted in a plant or a tree is a mass of close fibres near the surface, and it is then sure to be productive. I have trenched the ground preparatory to planting Broccoli on many occasions, sometimes deeply—as much as 4 feet—at other times not more than a foot, adding plenty of manure at the same time, but never did I find any satisfactory results proceed from it. A friend of mine, an ingenious and industrious gardener, once told me that he used to trench the ground deeply for Broccoli, but never found it do well. At last he left off trenching and it answered better. He even planted it in hard ground where he had to use a crowbar to make the holes, and then it grew much better than when planted on trenched ground. "I will never," said he, "plant Broccoli again on newly-trenched ground." Of course, some allowance must be made for the quality and texture of the ground. I very much doubt if light ground is ever improved by trenching.

However, to return to causes. The principal one is in making good the loss of matter drawn from the ground by the previous crop, and in supplying the succeeding one with a proper quantity of suitable food. This, of course, is given in the form of manure. The usual method is to have a load or two of rich-looking, highly-coloured stuff drawn in at the moment it is required. I doubt if half the good is ever done in this way that is supposed. There are colour and sometimes smell, but are these the necessary qualities required by plants? I venture to say not. On the other hand I think a plant looks for something rather different as its natural food, and takes manure only when it is in such a condition that its constituents are ready to decompose or part asunder without being under the influence of putrescent fermentation, and that is when it is neither disagreeable to the sense of smell, sight, or feeling—not that plants are supposed to be possessed of these senses, for it is not known that they are; but then they do absorb nutritive matter, and it must be in a condition that is not unpalatable to them.

From this I deduce that manure ought to be perfectly rotten, and, to make it still more sweet and natural, it should be mixed with a like quantity of soil (good turfy loam I prefer); that two years is a very good time for it to lie together, after being well mixed, before applying it to the ground; and that every year when a part of the heap is used a like quantity ought to be added to lie together the same length of time.

Here is presented the chief difficulty. Very few people care to devote a portion of their ground to a store of manure, and still

fewer to keeping it so long. The most important part of the business is considered the most objectionable; but it must be surmounted, or the plan I would recommend of growing good crops on a limited space cannot be accomplished. However rich and fertile the ground may naturally be, such crops as Broccoli soon alter the texture of it; and I, for one, put more faith in good sound manure and fresh soil than in phosphates and other salts, given, as they are and should be, in homœopathic doses. But where there is a will there is a way; and the means of concealing a heap of manure, or of turning it to account while it is undergoing decomposition, will present themselves readily enough if desired.

Of the three most important points to be attended to in the cultivation of Broccoli in small gardens, keeping the ground firm is the first—that is, as far as my own experience goes; for, having had chiefly to deal with light ground, I can affirm that I never knew Broccoli do well in it if planted soon after it had been trenched, although the experience of others may give a contrary result. Next comes manure, which has already been spoken of; and thirdly, the distance of planting them from each other. We are sometimes told to clear Broccoli of dead leaves as the winter approaches. Now why should this be necessary? If a plant receives plenty of room at planting it makes a short thick stem, and spreads out its broad vigorous leaves covering a yard or 4 feet, or even more, no dead leaves being visible, and if you happen to lift up the leaves in damp weather you will see the surface of the ground so covered and shaded completely matted with small active fibres. Now spread 3 inches of loam and dung over those fibres, and the plant will continue to grow, and no leaves will die; for, from its receiving a continued supply of proper food, it does not require the constituents of old leaves to build-up fresh, and then when frost comes the plant receives no injury, for the leaves droop and cover the stem—a provision of Nature which ought to be noted and allowed for.

So, then, in planting the Broccoli, first choose strong healthy plants that have been pricked-out from the seed-bed. Plant them, if in rows, not less than 4 feet apart and not less than 3 feet apart in the row, and do not plant till the soil has been run together by the rains of the last three months or so, at least if the ground is light; but remember, no manure need be dug into the ground. When the plants have grown considerably lay about 3 inches of it on the surface, without digging it in, and there need be no fear that the plants will not find it, for

what the fibres do not reach up to the rains will wash down to them. All this may be done between other crops, such as early Peas, Beans, &c.

It is one of the most common mistakes to suppose that the closer plants are packed together the more is obtained from the ground. It may be so with regard to individual crops, but as respects a succession it is a great fallacy. In sowing Onions, Parsnips, Carrots, and such dwarf crops, sow two rows about a foot apart, and then go about 4 or 5 feet and sow two more. Let the intermediate space remain till the time for planting winter crops of Cabbageworts, and plant one row of these through the centre of this bare five-foot space. They will cover the ground after being treated with manure as described, not dug in, but laid on the ground between and about the stems, covering the roots, and preventing evaporation. There will then be no necessity for clearing away dead leaves, or laying down to protect from frost—a plan which I have often adopted to my cost, for the mice attacking them have eaten out the hearts, and spoiled the crop.

With respect to sorts, no better authority can be given than late Numbers of THE JOURNAL OF HORTICULTURE. I have usually grown the Walcheren, because it yields for a length of time. I grow Early Cape on account of its not coming in all at once; Snow's Winter as a winter crop; Purple Sprouting as a profitable crop; and Miller's Dwarf, from its hardiness and lateness, yielding heads almost till autumn-sown Walcheren comes in again. I have occasionally grown other sorts, but find their particular points of excellence are of more consequence to the large than the small grower: therefore it is unnecessary for me to enumerate them. The same may be said of the time of sowing, for able pens have already done much on this point. I consider March the best time for sowing early sorts, and April for late ones.

But there is one practice I would recommend—that is, never to plant the first and strongest plants from the seed-bed. I once had a fine crop of Purple Sprouting Broccoli. I chose the very best plants I could find, and let them run to seed; there were no other plants of Broccoli or any other Cabbagewort seeding within a long distance of them that I knew of, and yet when I sowed the seed and planted-out the strongest plants they all came green and ready; but the second planting was perfection. Since then I usually throw away the leading plants from a seed-bed.—F. CHERRY.

METEOROLOGICAL OBSERVATIONS FOR 1862.

WARINGSTOWN, CO. DOWN, IRELAND.

Latitude, 54° 26' 30". Longitude, 6° 15' 30". Height above sea, 191 feet.

1862.	BAROMETER.		SELF-REGISTERING THERMOMETER.					FROST.	RAIN-GAUGE.			CLOUD.	WIND.													
	Corrected and reduced to 32° Fahr.		Monthly Mean of Observations taken at 9.30 A.M.	Monthly Range.	Highest of Month.	Lowest of Month.	Mean Maximum.	Mean Minimum.	Mean.	Monthly Range.	No. of Nights in which Thermometer Registered 32° on Glass.	No. of Days on which Rain or Snow Fell.	Amount.	Greatest Fall in 24 Hours.	Date of such Greatest Fall.	No. of Days the Sky was Overcast at	No. of Days it Blew from									
																	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.	
January.....	Ins.	29.55	1.21	52	25	44.30	35.45	39.89	27	10	18	Ins.	4.17	0.82	17th	17	16	0	1	1	12	4	8	10	5	0
February.....	29.81	1.30	54	29	46.46	35.14	40.75	34	10	4	1.03	0.41	22d	15	15	1	1	6	7	3	12	4	2	12	1	
March.....	29.50	0.82	55	33	47.61	35.39	41.50	32	10	11	2.81	0.73	7th	20	17	0	5	11	12	12	5	3	12	1	1	
April.....	29.73	0.90	65	35	56.47	39.03	47.75	40	3	15	3.29	0.59	20th	15	13	3	3	2	12	3	10	4	3	0	0	
May.....	29.64	0.57	68	32	61.00	44.48	52.64	36	1	12	4.15	1.05	2nd	12	7	1	2	0	4	1	8	7	6	12	0	
June.....	29.62	0.79	71	41	61.40	46.47	53.94	30	0	17	2.57	0.32	4th	16	15	2	1	0	12	2	7	6	10	0	0	
July.....	29.60	0.70	68	38	62.03	47.86	54.95	30	0	16	3.43	0.64	7th	14	14	1	0	1	1	3	9	6	9	1	1	
August.....	29.72	0.60	69	41	61.03	51.00	56.02	28	0	8	1.40	0.40	5th	17	18	1	1	1	2	4	9	4	9	0	0	
September.....	29.77	0.75	70	39	60.97	47.30	54.14	31	0	8	1.95	0.62	3rd	17	10	1	2	2	4	5	3	4	6	5	1	
October.....	29.57	1.32	64	32	24.90	42.00	48.45	32	2	19	3.65	0.96	20th	11	12	1	0	0	2	1	13	6	7	1	1	
November.....	29.72	1.11	58	23	43.13	30.90	37.02	36	22	10	2.71	0.91	29th	12	13	1	0	0	2	2	6	6	4	9	0	
December.....	29.89	0.60	52	32	47.32	38.58	42.95	20	8	15	3.29	0.65	17th	18	20	1	0	0	3	3	8	10	6	0	0	
Total.....	356.13									66	133	34.45	8.11		185	169	13	16	24	33	31	88	70	69	21	
Means.....	29.68					53.38	41.13	47.66																		

NOTE.—Highest barometer 30.34, February 9th, hard frost, wind S.E. Lowest 28.83, October 23rd, wind N.W., stormy. Highest thermometer in shade, June 2nd, 71°, wind S.W. Lowest 20°, February 9th, Wind S.E. Wettest month January, 4.17. Greatest fall in twenty-four hours, May 2nd, 1.05, wind N.E.—THOMAS WARRING.

THE HORSE CHESTNUT.

IN the reign of George III., there happened to be at the same time two members of the House of Commons, one of whom was Montague Matthews, and the other Matthew Montague. They similarly differed in politics, for one voted for the king's interests in preference to those of the people, whilst the other always voted the other way. On one occasion the Royalist's opinions were attributed to the democrat, which started the latter from his seat to assure the House that though they bore the same names, yet they as much differed as did a chestnut horse from a Horse Chestnut.

Quite as mistaken was our contemporary, "Notes and Queries," when it gravely informed one of its inquirers that the Horse Chestnut is so called because the fruit is given to horses! Its name so implies; but if horses could speak, they would assure our contemporary they never eat anything with a flavour so disgusting. Gerard may have been right, who wrote about the period when it was first introduced here, when he said it is called "Horse-Chesnut, for that the people of the East countries do with the fruit thereof cure their horses of the cough, shortness of breath and such-like diseases;" but we rather think that the prefix "horse," was merely employed to denote harshness and powerful flavour, as in the case of Horse-radish.

Its native dwelling place is among the mountains of Thibet, but it came to England direct

from the Levant, though a few years before, as Parkinson observes, "our Christian world first had the knowledge of it from Constantino-ple."

Here, we have at present, only to "make a note of it," as an ornamental tree. Gilpin thought it too heavy and too roundheaded, and when planted alone it is not libelled by that description; but we have seen it very effective when grouped with conical-formed trees, which broke the monotony of the outline formed by the Horse Chestnuts.

The double-blossomed variety has the additional merit of continuing longer in bloom than the single-blossomed.

"*ÆSCULUS HIPPOCASTANUM*, var. *FLORE-PLENO*. (Double-flowered Horse Chestnut.) — *Nat. ord.*, Sapindaceæ. *Linn.*, Heptandria Monogynia. It is a rather uncommon, and a very ornamental tree, equalling in vigour the common sort, from which it differs only in its double flowers. These are very showy, having a strong resemblance to those of a good double Hyacinth; they are pale blush, with deeper red at the base of the petals. Our figure was made from a specimen communicated by Mr. Rivers, of Sawbridgeworth, who informs us that he received it from the Continent about eighteen years since. The spike of flowers we have represented was not so long as is usual, owing to the tip having been killed by frost in May. The trees flower when quite young." — (*Gardeners' Magazine of Botany*.)



Æsculus hippocastanum flore pleno.

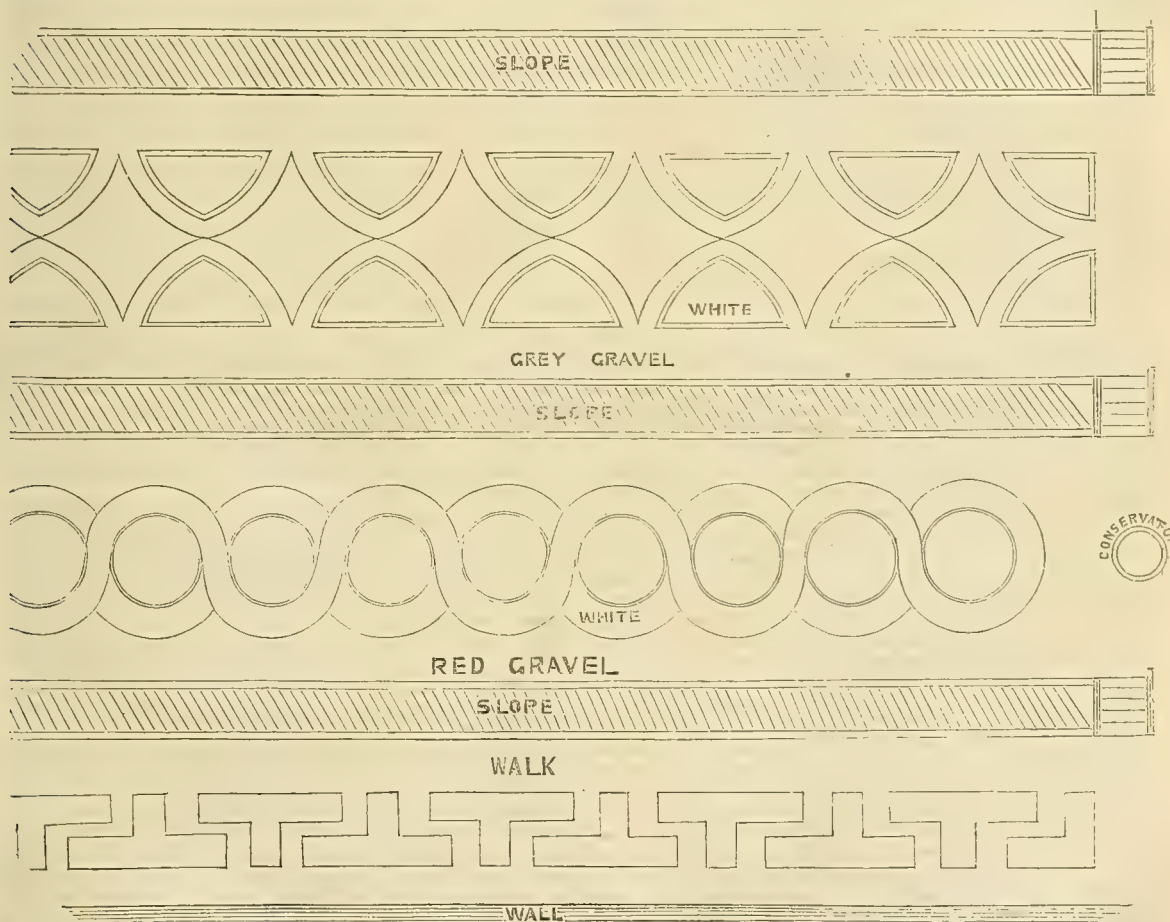
A FEW DAYS IN IRELAND.

WOODSTOCK.

(Continued from page 75.)

On the north side of this wall are the usual sheds for gardening purposes, flanked with beds of flowers, and backed with rich masses of Rhododendrons. Well back, so as to have plenty of light, are three or four ranges of houses and pits, with broad walks between them. A walk at the west end and a bank of Rhododendrons separate these from the conservatory, which stands at the north end of the first raised terrace. These houses were well supplied with plants for growing and forcing in winter—as Cinerarias, Primulas, Oranges, Justicias, Ruellias, Poinsettias, Euphorbia jacquiniæflora, bulbs &c. Other houses were filled with Fuchsias in bloom, Oranges, Camellias, &c., and all in good condition. We noticed a number of fine healthy plants of *Cantua dependens*, which is managed successfully, if we recollect aright, by resting the plants in summer and growing them in January. Most are more or less span-roofed houses; and a fine one, devoted to Pine-culture, is covered with Hartley's best rough plate-glass. The Pines, planted out and in pots,

with and without hot-water pipes beneath them, were in the finest health, stems thick, leaves short and stubby. In this and another house Vines in pots are forced early with great success, the pots being placed beside and over an open gutter through which a hot-water pipe passes. To enumerate all the outs and ins of these houses would require an article. Mr. McDonald traced something of the fine condition of the Pines to the rough glass, which he considered allowed more of the beneficial rays of light to pass through than even the clear plate. He had evidently studied deeply the subject of light in reference to glass houses, and we should be glad to have a detail of the conclusions at which he may have arrived, as in general we are rather in a maze on this important subject. These houses—those in the walled-in gardens and the conservatory—are heated by one of Weeks' tubular boilers, and a tunnel takes away the smoke, the most of which, however, is consumed.



From these houses we mount a granite stair and stand in front of the circular conservatory with domed roof, the roof being coloured delicately blue, and the bottom glass a light grey, thus requiring no shading and giving rise again to questions of suitable colours in glass. In order not to confuse our readers, however, it will be better to step through the walled garden and come out at the gate of blue and gold at H, where the three flights of steps stand facing us, and such a combination of bright colours presents itself to the right and the left, and on three different levels as can rarely be witnessed. We first find ourselves in the middle of a parterre next the wall, formed of T-beds. We rise six steps and we are on terrace H, 36 feet wide, formed of circles in chain pattern, extending to the right to the conservatory, a distance of we should say more than

170 feet, and to the left even considerably further, and terminated by a fine iron circular garden seat, of a bright blue and yellow colour, which is backed by a group of evergreen Oaks. Each circle in these chains is 12 feet across. We mount to the next terrace, which is of the same width and length, and which is formed with a chain of diamonds, with blunted triangles in the openings. These diamonds are 18 feet across.

The T-beds next the wall would have looked very well anywhere else except in the vicinity of the larger and more dazzling masses on these two upper terraces. We made a number of memoranda but from a drenching rain they became much obliterated. We must, therefore, confine ourselves less to particular than to general features. First, We were glad to find the beds well raised in the centre, the circles not only being circular in

their circumference, but circular across, forming more than the half of a globe. This is different from the practice of some people, who must have their circles a dead level. Mr. McDonald stated, with great truth, that "the elevating of the beds added a third to their surface, and different colours were shown-off with much better effect." Second, The beds on each side of these flights of steps were planted to match, as uniformity in such cases is always pleasing. The second and third beds, &c., generally follow suit. Each bed is intended to be a picture in itself; whilst, at the same time, it either contrasts with, harmonises with, or shades into, its next neighbour. In some beds the colours are contrasted, in others they are shaded; many Scarlet Geraniums are shaded-down, whilst the variegated sorts are shaded-up. A splendid shaded diamond bed consisted of Mrs. Maylor, Trentham Rose, and Princess Royal. Spitfire Geranium set-off to great advantage the immense trusses of Glendinning's Scarlet Seeding; and again, Spitfire formed a fine ground for what Mr. McDonald styled the "dazzling Stella of Beaton." Hardly any Verbenas are used in these terraces, except such a bright sort as Lord Raglan for lighting-up Lady Plymouth Geranium. No Calceolarias is so much esteemed as amplexicaulis; and even after the torrents of rain, its bright lemon colour and its large loose trusses or panicles were very charming. Variegated Geraniums are often mixed, not formally but in little groups, so as to present a broken surface. We have forgotten to state that the amplexicaulis Calceolaria is planted in peat and sand, which seems to answer well in the moist climate of Ireland. The best-coloured leaves we have seen out of doors of Farfugium grande were on this terrace. Third, There was every evidence that not only great thought had been exercised in the planting of the beds, but that they had received unintermitting attention ever since in regulating, thinning, and nipping, so that a shoot or flower should not be out of place. The beds, therefore, though full were not crammed, but the plants had room to grow; and such edging plants as Golden Chain were close to without touching each other. A high finish is given to the whole by the beds being covered neatly with moss, which was as green as if grown in a shady wood. We have tried moss several times; but in hot weather we could not keep it green, even if the birds would have let it alone. In a few hours they would scatter it over gravel or lawn. These beds at Woodstock would seem to say that the feathered tribe had not learned to scratch and tear there.

Now for an opinion, for we will not venture to criticise. This terrace of circles is the most telling and massive affair of the kind we have ever seen; thanks, not only to the planting of the beds, but to the treasures of our lofty friend Mount Alto. The pearly white spar that surrounds the beds, and the bright red gravel that forms the walks next the glass, render the whole a picture of great beauty. If anything seemed to be wanting, it would be a few elevated plants to break the uniform level of that mass of diversified beauty; but even on that we should be afraid to venture. In the upper terrace of diamonds, the beds are quite as beautiful and as well managed every way as the terrace of circles, and yet it seemed to us much less satisfactory. This was solely owing to the whole of the triangles on each side being filled with white spar. We do not object to the colour, but to the baldness and low level of the colour, though variety even here would not be unpleasing. Coloured gravels have a good effect round regular clumps, or even in dividing figures in a group; but we have never been satisfied with them when they formed the only garnishing of clumps themselves, when these were connected with other beds planted with flowers of tolerable height. Such composition-groups interfere with unity, even as respects level and outline. The raising of certain beds, or of particular plants in these beds, above the general level, has a very different effect from a whole series of beds having patches of colour sunk so much below the general level. To maintain this unity, even as respects the level outline of the picture, the white of these triangles ought to be as clearly seen from a distance as the flowers in the diamonds, which could only be done by either elevating the white gravel or sinking the plants, so that the masses of flowers should not be on a much higher level than the gravel, which, of course, would spoil the beauty of the picture. Convinced of the refined taste of the proprietors and their manager, it is not without diffidence we express the above opinion; but, considering the almost overpowering somewhat-level splendour of the circle terrace, we would be inclined, for variety, to plant these triangles, and to have the central plants as high as, or, rather, considerably higher

than the central plants in the diamonds. The fine gravels may then be used between and for walks as now. Without such planting, we think more unity would be secured by removing the inner lines of the triangles, filling the whole of the space with one kind of gravel, and having the walk of another colour. There can be no better opportunity for ventilating a subject which is daily absorbing increased attention. Our simple idea is, that a regular clump in a parterre should be filled with plants; or, if mere colouring material is used, there should be unity as respects level.

We now pass on to the circular conservatory that stands at the end of the terrace of circles. The outline of this elegant house, built by Mr. Turner, of Dublin, is, therefore, peculiarly appropriate. Elegance and lightness are its marked features; the lofty dome has given the key-note to the inside arrangement, the plants being grouped in blunt rounded pyramidal form. In the centre was a fine plant of a dwarf variety of the Date Palm, supported with Musas, Hedychium Gardnerianum and coronarium, the latter adding its sweet white flowers to the attractions of its fine foliage. Then there were fine plants of Begonia fuchsoides, with huge clusters of depending blooms, fronted with fine-foliaged plants of Begonias and other genera, and relieved by noble plants of feathered Cockscombs, gold and crimson, and huge masses of Vallota purpurea, many counting fourteen large flower-stems in a pot. From the roof were suspended baskets of creepers and climbers, allowed to hang over the baskets, and also mount on wires. Instead of the common round pot, ovals and other shapes were used; but even these did not seem artistic enough for such a scene. A gentle shower can be sent over these plants from the roof when desirable; and we may mention here that the hose and the pipe can be freely used in watering elsewhere, which is a great advantage. From the conservatory, over the flower-beds, over the Oaks that back the fine garden seat, a fine outline is obtained of the mountains of Carrigurn. Some lovers of uniformity might wish that another conservatory occupied the site of the elegant garden seat.

From the steps at L, the sloping lawn on the left side of the Irish Yew-walk, from L to M, though open in places, is massed with shrubs, which conceal all view of a roseroy and bulb garden beyond; these gardens being again blocked-out from each other by masses of Rhododendrons, &c. On the right side of that Yew-walk, and reaching to the boundary farther back than the line of the conservatory, the sloping lawn is open, and on it are clustered the finest specimens, with one exception, of the Pine tribe at Woodstock.

The walk is terminated by a seat at M, and in the background is a fine plant of the Cedar of Goa, with a diameter of head of 50 feet, and the trunk near the base $2\frac{1}{2}$ feet in diameter. On the lawn such kinds as Pinus insignis were as green as if there had been no severe frost in England in 1860 and 1861. Among Araucarias and Deodars was a fine plant of the latter 30 feet in height, which had become diseased when young, and had fresh strength given to it by being grafted on the Larch. The following were fine plants from 30 to 40 feet in height:—Pinus excelsa, Ayacahuite, ponderosa, pinaster, Hartwegi, &c., with recurring branches, and apulensis, with fine graceful foliage; Abies cephalonica, Douglasii, morinda, &c.; Picea pinsapo, Webbiana, &c.; with smaller plants of nobilis, Wellingtonias, and other choice kinds; also fine, thick, upright specimens of Cryptomeria japonica, and one of the finest specimens we ever saw without protection of the Cunninghamia sinensis, from 30 to 40 feet in height. From the end of the walk at M fine peeps are obtained, between these specimens, of the terrace gardens and the ribbon-borders through the gates in the walled garden. At this point we should think the height would be fully 150 feet above the level of the bowling-green.

Turning now to the left side of the walk we soon enter into a roseroy, the beds being oval in form, surrounded with arches for climbers, and a straight walk so arched leading to it and from it from east to west. In an open space of lawn near it stands the exception above alluded to, the unequalled specimen of Araucaria imbricata, above 40 feet in height, and the bole 21 inches in diameter near the base. The great beauty consists not so much in the size of the plant as in the density and luxuriance of the main branches, and the drooping character of the branchlets—a beauty of which even a photograph gives little idea unless looked at through a proper glass. Proceeding north-westward we come to a beautiful summer-house close to the boundary, from which fine views are obtained of Brandon Hill, side views of Saddle Mountain, with cottages on the cul-

tivated land, and fine spiral trees in the foreground. Returning eastward by a fine curved walk, backed with masses of Rhododendrons and specimen Cypresses, &c., along the sides, leaving a Boxed bulb garden and a splendid fountain on our left, we again cross the lawn and come near the steps at D and E to obtain a good view of the Araucaria-avenue.

This avenue is at present 600 yards in length and 50 feet in width from tree to tree, the trees standing 30 feet apart from each other in the row. One charm of this avenue is the sloping rising ground on which it is placed—somewhat similar to what we have shown in the pleasure ground. A second charm is its being backed on each side with masses of flat-headed and spiral trees; a third consists in the present termination being somewhat closed by a John-O'-Gaunt arch, formed by a fine old Scotch Fir on each side; and a fourth charm will be found in the mode of planting for securing health and a natural appearance to the trees. Note here that most if not all of those plants had previously been planted in different places at Woodstock; but they had fallen into a very unhealthy state, the hard foliage being crusted with green slime through deep planting and stagnant moisture. To remedy this, a deep track, more than 5 feet deep, down to the rock or slaty bed, was cut 40 feet behind and parallel to each row of Araucarias. On the site for each tree two or three loads of rough stones were placed chiefly below the original level, and then on that a mound formed of twelve loads of good mixed earth. Meanwhile the whole plant of every specimen was carefully scrubbed with soap water and small brushes, and well syringed with clean water, and in many cases the roots were also washed, and the whole were planted in December because there was most time then. So well was that planting done, that plants some 6 feet in height without stake or tie never swerved from the perpendicular, and were fast becoming as distinguished for green luxuriance, as they were previously marked by a sickly hue.

The surface of the avenue was a little rough when we saw it, but a fine, wide, hard promenade of grass has been made along the centre, higher than the ground at the sides. The bottom was formed of schist and granite gravel, the finest at the surface, mixed with peat and well pounded till solid; on this a thin turf was laid, fine soil scattered over it, then sown with Hard Rescue Grass seed, and thoroughly rolled so that a horse may gallop over it almost without leaving marks of hoofs. We can believe the latter fact thoroughly, as the finest grass walk we ever saw, was one that had been allowed to form itself naturally over a disused well-drained gravel path.

Standing at the end next the mansion the Scotch Firs make such a nice termination that we are perfectly satisfied; but when we reach where these Firs stand, a hankering desire comes over us that the avenue should be continued a considerable distance farther on to the boundary of the deer park, so that the eye would rest on the sky outline and the fine masses of timber beyond on Mount Alto. We see no objection to this, except exposing the substantial wall of the deer park, but that could be concealed either by a covering of Ireland's evergreen creeper or a bank of turf. We can well imagine that this matter of fences is one of great importance; as, though there are some thirty-five acres of dressed ground, and a range of ornamental grounds averaging one mile in every direction from the mansion, and these are all substantially fenced, you never by any chance see a boundary until you come right up to it.

Turning eastward and southward from the top of this avenue, we traverse a fine open glade formed of dense masses of Oaks and Pines, with newer things at the sides, and through the wood that leads to the glen, passing in our way huge masses of the Flowering Fern, *Osmunda regalis*, until we reach the Swiss cottage—a private picnic rendezvous for the proprietors and their friends. Of the antique furniture, table service, library, &c., it is not our province to speak. The position is beautifully picturesque and romantic, close to a precipice overhanging a dashing waterfall. Before reaching the glen fine views are obtained of the distant Carlow mountains, and southward, near New Ross, of the meeting of the Nore and the Barrow—

"which long Sundered do at last accord
To join in one, ere to the sea they come;
So flowing all from one—all one at last become."

The glen is a lovely place, especially on a fine summer's day. There is now the sweet murmur and the rattling din of the streamlet as it emerges from a quiet pool or battles with a huge boulder rock, or rushes down a precipitous incline or fall. There are the narrow paths, with nothing artificial about them except

a few flints and stones in the softest places, winding round along the almost precipitous at times and at others more shelving banks; whilst these banks themselves are clothed with luxuriant timber, and all suitable openings planted with Deodars, Araucarias, and others of our best Conifers. In addition to the other undergrowths, we ever and anon meet with the New Zealand Flax in flower, great masses of different kinds of Ferns—as *Aspidiums*, *Aspleniums*, *Athyriums*, *Blechnum boreale*, and *Ceterach* in great abundance; *Lastreas*; *Hymenophyllums* in large patches; *Woodsias* rather scant; *Polypodium vulgare* in great beds, and lesser patches of *bifurcatum*, *cambricum*, *dryopteris*; plants of *Trichomanes*, and plenty of *Scelopendrium*s in different varieties; and here again huge plants of *Osmunda regalis* 10 feet in height and 30 feet in circumference of head.

We must confess, however, that grand as was the picture, we were not in the best mood for particularising its distinctive features; for, feeling some twinges of rheums the previous night, when the thunder rolled and the rains poured, as they can do in Ireland, we would have fled to the nearest shelter but for something like a feeling of shame and cowardice; for there walked Mr. McDonald as unconcerned as if clothed with ducks' wings, and there stood the ladies, who honoured us with their company, admiring some romantic view, or stooping to gather some extra beautiful Fern-frond, or so wrapt in the admiration of the beautiful that they

"skelpit on through dub and mire,
Despising wind, and rain, and fire"—

not even holding their bonnets, and leaving ribbons and crinolines to look after themselves. Surely, surely the worthy old sage who once gave us the advice as the essence of wisdom, "Never walk with a lady on a rainy day if you can help it," could never have had the opportunity of observing with what a calm philosophy our sisters could look upon such an occurrence in Ireland.

We were, therefore, glad to reach the Red House, situated close to the river, with fine views upwards and downwards, and about a mile distant from the mansion. With the exception of the terraces, &c., near the mansion, which can only be seen by application, the whole of the rest of this beautiful demesne is open for the enjoyment of visitors. The Red House is, as it were, set apart for their comfort; and the chief employment of the people who lived in it seemed to be to minister to their happiness. A large upper room is set apart for picnics, banqueting, fiddling, and dancing. A nice drive of nearly two miles takes us to the village of Innistioge, by the side of the river. After the glen this is somewhat tame, though furnishing fine peeps of the mansion and grounds, and Mount Alto in the background, until, passing the line of the mansion, we come to the precipitous bank, which we have already mentioned. As we come to a cottage on the side of the river, a waterfall tumbles down from the opposite bank, only a little less lofty than that on the side on which we stand. The whole road to Innistioge from this spot is charming—the luxuriance of the trees; the wreaths and long ropes of Ivy, Clematis, and Woodbine; the masses of creepers and Ferns—and the introduction of such thorough mountaineers as Conifers, Deodars, and Araucarias would, as they grow, add still more grandeur and grotesqueness to the scene.

Noticing the gates at Innistioge, a fact came out incidentally well worth chronicling. These gates are locked at a certain time in the evening, but are opened for egress on request. A party had kept merry at the Red House until the short hours of the morning, and on arriving at the gate, though belonging to what are termed the upper classes too—the lower classes would not have done it—because the people in bed could not hear them quick enough for their fancy, they burst open the gates and took them from their hinges. Many, indignant, counselled inquiry and exposure; but Col. Tighe simply wished the gates to be put right, and no notice to be taken; no doubt concluding that the reflections of the wrongdoers must, to a certain degree, be a punishment.

Through the kindness of the estimable proprietors, we had a drive over the Fern-wreathed bridge of Innistioge along the rising ground on the opposite side of the river, and through the cultivated land between it and the hills; went through the buildings of a nice compact farm homestead; partook of whiskey and biscuits in the parlour of the nice substantial house, that had handsome plants in the windows and a flower garden in front; and noticed that the cottages in our route, built and building, that came in so nicely in the views from Woodstock,

were built with a greater regard to comfort than any mere picturesque effect. From that elevation the whole of Woodstock, the mansion, terraces, blue-domed conservatory, glades, masses, and the splendid backgrounds of Mount Alto, come in as a charming picture.

Farming is also carried on with great spirit under the supervision of Mr. King. We had only the opportunity of admiring the neatness of the homestead; the cleanness of all carts, ploughs, and utensils; the fine appearance of cows and horses; and the extra luxuriance of a large field of Mangolds and Carrots—the Mangolds being in rows about 33 inches apart, and the Carrots in rows between the Mangolds. These Mangolds Mr. King often keeps good till the following autumn.

And now we must say adieu to charming Woodstock. Much of its beauty must be seen to be appreciated, much we have left untold, much, no doubt, we have forgotten; but we shall not easily forget the brotherly communicativeness of Mr. McDonald, the kind attention of his fellow servants, and though last, not least, the courtesy and generous hospitality of the proprietors, which we valued all the more because, looking on them as a proof—additional, no doubt, to others of a more tangible character—that they fully appreciated the services of their talented superintendent.

R. FISH.

GRAPE-JUDGING.

I MAKE no doubt the readers of your valuable Journal will think enough has already been said respecting the question of Grape-judging at our future exhibitions. I am not about to criticise the views of previous correspondents on the subject, neither do I support them; but must at once admit that I have not yet seen the subject brought forward in a direct way, supporting what, in my humble opinion, is the most important feature in Grape-judging and Grape-growing—viz., the colour.

We shall, no doubt, soon be made aware of the alterations to be effected in this all-important question; but for my part I cannot perceive any reasonable grounds for any alteration whatever. Many will ask, Why should Grapes not be tasted as well as other dessert fruit? The question appears feasible enough, but in my experience I have always found the best coloured Grapes to be of the best flavour—far before those of more inferior colour; and so long has it been customary to judge Grapes by their colour, &c., that I think it will be long ere exhibitors will reconcile themselves to the system of having their Grapes tasted.

We are all aware that by far the greatest number of exhibitors bring their Grapes deficient in colour. This, I think, is owing to the idea that when a Grape commences its colouring it requires no farther care; and not only does a Grape look well when thoroughly coloured, but I think we cannot call it brought to perfection unless it is so.—HARRY.

RAISING BEGONIA-LEAF AND OTHER CUTTINGS ON HOT-WATER PIPES.

LATE last autumn I had some of the choicest kinds of Begonias sent to me. Not having at the time a place I could allot to them with a little bottom heat, I was rather at a loss what to do with them.

Just at the time I was about to start my winter crop of Cucumbers, and being desirous to raise some plants from these fine leaves, I took some old half-inch slates and placed pieces on the hot-water pipes in the Cucumber-house. I filled some 60-size pots half full of potsherds, filling up the remainder with leaf mould, a little fibry loam, and about half an inch of silver sand on the top.

I cut the leaves into wedge-shaped pieces, about an inch in length, and inserted them in the sand as thickly as I could, and then placed the pots on the slate, where they obtained a steady bottom heat. Some might think it was rather dry, and so it would have been had I not sprinkled the slate over with water two or three times daily. The cuttings wanted little or no watering, the moisture of the house being ample.

In a very short time each piece of leaf had produced a young plant. As they had done so well I put in some more store cuttings—such as of the Croton, Cissus discolor, Vincas, Clerodendrons, Hibiscus, and many others, besides a lot of Lycopodiums, &c., which struck in a comparatively short time.

I potted them off when struck into 60-sized pots, and placed

them again on the slates, where they soon made a rapid move, and so did all the other plants above mentioned.

I soon found they wanted a shift, when I gave them a 48-pot, and placed them again on the slates, where they grow very luxuriantly and soon made large plants. I then removed them to a rather cooler house, where they stood until Christmas. Then some of them were placed in a silver vase and stood upon the dining-table, and I think nothing at this season of the year could look superior than a healthy, compact, and well-grown Lycopodium.

Well, the time came for Chrysanthemums. As soon as the shoots were 2 inches long I had them put in. I had twenty-five sorts and I filled twenty-five pots, as above stated about Begonias—sticking the cuttings in as thickly as I could, and placing them in the same house; and in about fourteen days the pots were full of roots. I potted them off, and placed them in another house with a rather lower temperature. I then put in a batch of Verbenas, variegated Alyssum, Gazania splendens, Lobelia speciosa, Tropæolum elegans, &c. I have begun in time no doubt, but there is nothing like being in time when you can see a chance before you. The Verbenas were put in on New Year's-day, now they are all well rooted, are growing like weeds, and ready for hardening-off by degrees.—J. B. C. F.

PLANTING AND TRIMMING HOLLY AND OTHER EVERGREEN HEDGES.

LADY GEORGINA OAKLEY would be glad if the Editors would answer the following questions:—1, What is the best time to plant a Holly hedge? 2, What is the best time to trim a Holly hedge, old and overgrown? 3, What is the best time to trim a Laurel hedge, old and overgrown? 4, Can old Laurustinuses be moved with safety, which have been kept low, having formed a thick hedge?—*Lisburne House*.

[The best time to plant a Holly hedge in most parts of England is the last week in August and the first week in September, or as soon after as the first heavy rain occurs subsequently to the heat of August. If the rain poured down in torrents any time after the 20th of August, we would begin planting Hollies, Laurustinuses, Portugal Laurels, and such difficult evergreens, and we would wait for the rain till the 20th of September, but no longer. The next best time to move Hollies under 10 feet in height, and Laurustinuses under 5 feet high, is the last fortnight of May, and the first fortnight of June. Any day, however, from the 20th of May to the 20th of August is far better for removing large evergreens than any day from the end of October to the end of April.

The middle of April is the best time to trim a Holly hedge, but the middle of May is better for trimming a hedge of Laurustinus. All other evergreens are better trimmed between the middle of April and the middle of May, and again to have "a look-over" in July.

Old Laurustinuses are difficult to move, but you have no need to fear, as you have a certainty of success if you order the old plants in the old hedge to have the roots cut down on both sides of the hedge any time in April—say to open a trench on each side of the hedge as if for lifting the plants, and after cutting all the side shoots straight down to fill-in the trenches. A mass of fibrous new roots will take possession of the new soil during the summer, and in the autumn the plants will take up the same, almost as if they were out of plant-tubs and almost as safely. The same treatment is applicable to Hollies. Hedges of common Laurel may be made any time from September to June, but not Portugal Laurel hedges. Under the above treatment you need not entertain the least fears about your Holly and Laurustinus.]

PLANTING PAMPAS GRASS.

WHAT is the best season for transplanting Pampas Grass, and can the transplanting be done safely in the spring?—M. B.

[April is the best month in the year for transplanting large plants of the Pampas Grass, and the middle of May is the best time to turn Pampas Grass out of pots. Large plants of it are very easy to move—almost as easy as rhubarb plants. They carry very large balls, and the balls are full of roots, and almost as dry in most soils as a pot ball that has received no water for a long time. Removing the largest plant of Pampas Grass in

April is only a question of strength, on account of the weight of the ball, and the difficulty of reducing it by reason of the number and tenacity of the roots. Nine out of ten Pampas Grass plants in the three kingdoms which are over three years old from the planting-out, stand now very much in need of transplanting, in order to give free scope and fair pasturage to the roots. Every large Pampas Grass plant that is to be removed in April—say after the middle of the month, ought to receive three thorough waterings during the three weeks preceding the operation, and a thorough watering to a full-grown Pampas Grass means from twelve to thirty gallons of clear soft pond water.

The hole for a large Pampas Grass plant should be 1 foot wider than the well-moistened ball to be inserted in it, and should be filled in with the richest and most permanent compost that can be made.

The best Pampas Grass we have seen had forty gallons a-week of strong liquid manure from the first appearance of the flower-stems till all the flowers were at their full prime. From that plant, and from what passed under our own eyes, this notice is written.]

JUNIPER HEDGE.

I AM courteously reminded by a correspondent from Ireland that in the list of plants given, some time ago, as suitable for hedges, the Juniper was omitted. I hope to hear of other cases where plants not named in my list are found to make either useful or ornamental hedges, and I feel more obliged than otherwise to those who can correct any imperfection in my communication.

That the common upright Juniper, as our correspondent says, makes both a pretty-looking and a useful hedge, I verily believe. I have seen the Italian Juniper somewhere planted in a row, and looking remarkably well; but I do not remember seeing the common Juniper so treated.

I believe the kind alluded to by Mr. Beckett, the gardener to Lord Lismore, Shanbally Castle, Ireland, to be one of the improved varieties of the common kind growing wild on dry, hilly places, where the Heath, Furze, and Savin are found; but it is much less commonly met with than they are, and seems to recede more quickly before cultivation than many plants. I have no doubt, however, but with the advantage of a better soil it grows freely as a hedge plant.

Perhaps Mr. Beckett will be kind enough to inform us how Pinuses do in general in the more humid climate of Ireland. I should expect the Silver Fir section, as *Picea Webbiana*, and others might, perhaps, do well there; with us they are less satisfactory. The *Taxodiums* are also likely to grow well in Ireland. Communication from the sister island is at all times acceptable, and I hope we may often be favoured with notices of plants which are either in an unusual condition of luxuriance or the contrary, for both are equally interesting and instructive, as well as all other information on horticulture and its kindred arts.—J. ROESON.

SUCCESSION OF PEAS.

If "D." of Deal will sow his succession Peas throughout the summer, of Sangster's No. 1, he may enjoy that Pea both as an early and late variety. He must be aware that Daniel O'Rourke is the same variety as Sangster's No. 1.—W. G., *The Gardens, Cubyean Castle*.

[We think this is not the information "D." of Deal needs, for no one would like to have a continued repetition of Sangster's No. 1. It is a very good early Pea, but its flavour will not bear comparison with that of later varieties. "D." of Deal we think would like to know when to sow the better-flavoured varieties, such as *Champion of England*, *Ne Plus Ultra*, &c., so as to have an uninterrupted succession.—EDS. J. OF H.]

INFLUENCE OF A LIMEKILN ON GROWING POTATOES.

Do you consider the proximity of limekilns to a field of Potatoes would be likely to have an injurious effect upon the crop?

Persons in the neighbourhood have observed that those growing near the kilns have been healthier and finer than others at a

distance under precisely similar cultivation; and feeling interested in the question from the probability of some kilns being erected near my ground, I should feel grateful for your opinion on the subject.—A KENTISH SUBSCRIBER.

[The observation you quote is really an answer to your inquiry. The volumes of gas and vapour given out by chalk in the process of converting it into lime by the limekiln are chiefly steam and carbonic acid, both of which are more likely to prove beneficial than injurious to Potatoes, and, indeed, to any other crop. So far is carbonic acid gas from being injurious to plants, that it has been found to be beneficial though amounting to one-twelfth of the air in which they were growing. In the calmest day the air over a field surrounded by limekilns would not contain one-hundredth part of carbonic acid gas.—EDS. J. OF H.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

CONTINUE to prepare ground as directed last week. If any part of the garden is not drained, drain it effectually. Make drains 3 feet deep and 18 feet apart. Use tiles and soles, and place 6 inches of brickbats, stones, or rubble over the tiles. Shake a small quantity of litter over the stones or other material before filling in the soil, which will render the drainage more perfect. *Cauliflowers*, give air freely to the plants in frames or under hand-lights. *Mustard and Cress*, keep up a regular succession, and sow Rape when such is required for salading. *Peas*, when the weather will permit draw a little earth to the stems of the early crop, and if cold bleak weather prevails, they will be benefited by the shelter of a few spruce fir branches on the windy side. *Radishes*, those on banks or borders will require strict attention, the coverings to be removed every fine day, and dry soil, charred refuse, or dry wood ashes strewn amongst them for the prevention of damp, mildew, or shanking. *Sea-kale* and *Rhubarb*, keep up a succession either by covering with pots and fermenting material, or by planting in pots and placing them under stages in the greenhouse or stove, the latter being the least trouble—a great consideration in the busy time which is approaching. Continue surface-stirring, and watch opportunities for the destruction of slugs, which if not kept under will soon destroy the labour of weeks. Look over previous directions, and endeavour to bring up arrears. *Basil* and *Margoram*, sow small quantities in heat where such are required green.

FLOWER GARDEN.

Proceed as rapidly as the weather will permit with the removal and planting of large shrubs. Layering may now be successfully performed where the plants have become bare and unsightly at the bottom. Finish the planting of Box-edgings, and fill up all gaps in the old ones. For the destruction of worms on lawns the following receipt is recommended:—Take 1 ounce of corrosive sublimate, pound it fine, dissolve it in sixteen gallons of water, then with a watering-can and a fine rose water the turf infected, when they will soon appear on the surface and can be gathered-up and removed. Prepare beds for Pinks, Carnations, and Pansies. Look over the Dahlias, and remove all decayed portions from the stems and roots.

FRUIT GARDEN.

Planting in every part both against walls and in the open quarters should be completed without delay. Mulch the newly-planted trees, and stake those requiring it at once. Where Filbert trees are kept dwarf, which is the best method of cultivating them, remove all suckers and fork-in some manure about the roots. Shorten all the shoots of last year's growth, but do not interfere with the small shoots, which are the productive ones. Thin out the wood if crowded.

GREENHOUSE AND CONSERVATORY.

Established plants in the conservatory should about this time have the mould well stirred in the pots. Every plant to be kept free from decayed foliage and fading blossoms, with frequent movings and removings from the forcing and other structures, in order to maintain health and gaiety. Place suitable trellises to the *Tropæolums* that are not already furnished, laying a good foundation by furnishing the bottom of the trellis wall. The varieties of *Kennedya*, *Zichya*, *Hardenbergia*, *Gompholobium*, &c., should all have suitable trellises and early training. Water Heaths with care; air freely night and day if the weather is at all favourable. Be cautious with fire heat; even when frost occurs it must be moderate. Stop the strong shoots of

the free-growing varieties, and always keep the dead flowers cleared-off. Any compact plants of Scarlet Geraniums which are intended as specimen plants for vases, baskets, or single specimens on the lawn or terrace during the summer to be now shaken out of their pots and repotted, using turfy soil with a little leaf mould, old cowdung, and sand. Give them, if possible, a gentle bottom heat for ten days or a fortnight, until they make fresh roots, and keep a moderately moist atmospheric temperature of from 50° to 55°. When they have made fresh growth remove to a light, airy part of the greenhouse. Repot them into larger pots or tubs towards the end of March. The Fuchsias should now be looked to without delay. Where fine specimen plants are required, shake the old plants out, reduce the roots, and repot them. Introduce them to a forcing-house at a temperature of about 60°, and as soon as you can obtain cuttings an inch long, strike them in pans of sand kept damp. When struck to be potted into small pots in a compost of turfy sandy loam, turfy peat, and leaf mould, and some sand, and to be shifted into larger pots, as they require to be grown in a warm moist atmosphere, remembering that if you want large plants they must be grown to a considerable size before they show bloom.

FORCING-PIT.

Syringe freely. Continue a kindly humidity. Apply air in suitable weather, taking advantage of those occasions to apply more fire heat. Be very cautious in the application of fire heat at night, or many varieties of plants will prove abortive.

PITS AND FRAMES.

Give plenty of light and air to these structures in fine weather. Look over the plants frequently, and pick-off all decayed leaves. Pot-off the autumn-struck cuttings of Scarlet and Ivy-leaved Geraniums, Fuchsias, Verbenas, shrubby Calceolarias, &c., that are still in the cutting-pans or pots; to be then placed in a gentle heat till they are well rooted. Make a hotbed for cuttings and seeds with fermented dung well-sweetened. W. KEANE.

DOINGS OF THE LAST WEEK.

ROUTINE much the same as the previous week. Wheeling, trenching, turning over ridges, &c., in crispy mornings; pruning, nailing, tying, &c., in fine days; potting, turning soil in sheds, making stakes, tallies, &c., when wet and sloppy.

KITCHEN GARDEN.

Sowed Sangster's No. 1, Dickson's Favourite, and Jeyes' Conqueror Pea, for second crops. Will sow for the first out-of-doors crop three weeks or a month hence, in boxes, to be transplanted. Sowed Tom Thumb and Bishop's Dwarf in boxes under protection, to be transplanted under fences, to succeed those that will have a little glass protection. Stirred the surface soil among those in rows and pots, and the same among Lettuces, Radishes, Parsley, Cabbages, &c. Sowed Carrots, Radishes, and a few Cauliflowers in a slight hotbed of leaves. If Lettuces and Cabbages are likely to be scarce, a pinch sown now in such a mild heat, and hardened-off by degrees, will come in only a very little behind those sown in autumn, and they always seem to eat rather crisper and sweeter. In sowing such a bed of Carrots, we sometimes throw the seed broadcast, and at other times, and perhaps it is the best way, we sow such kinds as Early Dutch and Early Horn in rows about 5 inches apart, and the Radishes and Cauliflower between. The thinning and drawing of the first give room to the Cauliflowers, and when these are pricked out under cover of a mat at night, there will be plenty of room for the Carrots. Potted, also, in four and five-inch pots a number of plants of Cauliflower, and set them where they could have protection, and they will come in useful if we should have severe frost in spring. Put more Asparagus into a slight hotbed, and placed more Rhubarb and Sea-kale in the Mushroom-house.

Swept over all the Mushroom-beds; and as a few woodlice appeared notwithstanding our care, poured some water, nearly boiling, down by the sides of the bed, where they would be sure to lodge after the sweeping. If the water is thus poured from a small spout it will penetrate the bed very little. In addition to this, when the woodlice become numerous, we place small pots with a piece of carrot or turnip in them, and filled lightly with dry hay or moss, and turn the vermin into hot water in the morning. Since we have taken to smoke the house with sulphur in the autumn, we have been troubled very little with woodlice; but a few are apt to come in with the manure material. Potted Dwarf Kidney Beans out of a box, sowed more, and moved

Potatoes in pots into a colder place under glass. Potted Cucumbers in a small dung-frame, as we do not yet wish to use fire heat for them, and for raising young plants nothing after all beats a bed of sweet decomposing material. When the necessary material, and time and care can be commanded, no sort of heat suits them and Melons better. We have cut better fruit of the latter in the end of April from frames than ever we did with hot water; but then the plants never had the chance of suffering from a chill, and the banks of fermenting material that came in afterwards as enriching composts would do our eyes good to look at now. We suspect the fine new improvements that in some places are keeping everything but the distant scent of manure from the gardens, will perforce secure sweet vegetables, if they should be small. A good many of us could not grow them rank if we tried.

FRUIT GARDEN.

Pruned and nailed common trees as opportunity offered, leaving Apricots and Peaches alone, but loose-nailed to let the air about them, and to prevent the trees becoming heated from contact with the wall in such a sunny day as we had on the 28th ult. Have not pruned any Gooseberries yet, as we did it too soon last year. Feel almost disposed to let them alone until the fruit shows, the birds getting at ours with all our care last year. The weather has as yet been too mild to tempt birds much. Will syringe the bushes with a mixture of lime, clay and soot, the bitterness of which will tend to keep birds away as the buds swell. Just inserted the points of a fork between the rows of Strawberries to keep the dung, &c., on the surface loose, and let the rains pass freely through them, pressing the rich soil to any buds that seemed to stand naked or higher than the rest. We have long found that Strawberry plants will stand much cold if there is little or none of the stem exposed below the buds. Two years ago we were asked to look at a plantation of Strawberry plants, which though seemingly strong produced nothing but leaves. We noticed that the plants if separated might have been taken for little dwarf standards, so long and naked were their stems; and to the effect on them of a severe frost, and watering late in autumn with very rich liquid manure, we attributed the ruin of the flower-buds. At any rate, another plantation in a neighbouring garden, of the same kind of Strawberry and planted at the same time, which had received no such treatment, presented no similar appearance, and was a mass of bloom and swelling fruit.

Forward Strawberries in-doors will need more water as the fruit is swelling, but to be given moderately in such dull weather. Those freshly placed in the house should be kept rather dry before the bud is seen moving, and even then rather dry instead of wet until the flowers are expanding. Those in bloom should have a feather or a dry hand waved through them to disperse the pollen. We are obliged for the thanks sent by several, as to not allowing water to stand in saucers during the early stages of the forcing of Strawberries, and some correspondents wish to know if there is nothing else that would do as well as moss for setting the plants on, as they have a difficulty in obtaining it, and it blows so about. We have often used, because we could not help ourselves, thin pieces of turf—say 6 or 7 inches wide and 1 inch thick—placed on the shelf with the grass side downwards. The pots were set level on the earth side, and to secure that level a little leaf mould was scattered along. This secured a moist bottom, and the plants could not be overwatered except by the grossest carelessness. We were rather pleased the other day in a princely establishment, where they had splendid shelves on purpose for Strawberries, with edgings an inch deep and lined with lead and pitch to retain water, to find that the most of the Strawberry-pots, except those fruiting, were either standing on bare shelves, or on temporary shelves covered with thin turves. One side of a long span-house had a stage thus formed; bricks set on the bed supported the upper shelves and their line of turf, and the plants looked extremely well and promising. Our friend in pointing to the shelves said nothing, but the look just spoke thus—"There! if we have such abundant means we don't despise the simplicities." For a swelling fruit nothing can be better than these edged shelves, but the danger is, with careless watering, that the plants at an early stage are apt to become too wet, just as they are liable to do when set in saucers. Last year an amateur asked us to look at his Strawberry plants in pots, they should have just been coming into bloom, but scarcely a bloom opened kindly or showed farina on the stamens, and there need have been no wonder, for though there had been a

week of dull weather the saucers were filled up to the brim every morning, and thus the Strawberry was made a marsh plant. In such circumstances of the plants a good rain out of doors would most likely have secured a fine crop; but then that rain passed beyond the roots and did not stand stagnant around them.

Looked over Strawberry plants in orchard-house to see that they did not become too dry. The house being a lean-to, had the Peach trees against the wall untied well washed with soap and water, and when dry painted with sulphur and clay, putting about 3 ounces to the gallon of Gishurst in it. The wall was then washed with fresh lime paint, darkened sufficiently to a dull colour with lampblack, as in such a house the reflection of light and heat from a very white wall would have been too much, especially when the trees were in bloom. In such lean-to houses used as vineries, the Vines being taken up the rafters, a much whiter or lighter colour may be used. When, however, in such a house, we have used the back wall from top to bottom for shelves, we have frequently given such a wall two washings—first a dull white as above for the early part of the season, that the plants near the wall should not suffer; and then a lighter colour in summer after the leaves of the Vines had fully expanded, but keeping air on for several nights afterwards, in order that all the light possible should be thrown back from such a wall, so as to benefit the Vines in general, and any plants on the floor, or on the stage, in particular. Amateurs with their one lean-to may thus see the importance of not having their back wall too bright in spring if they grow plants against it, and the equal importance of not having that wall covered with dirt and green slime as the autumn approaches. See late notice on "The Science and Practice of Gardening." We mention these little matters more prominently because we are all apt to take to gardening by fits and starts, and if this can be laid to the charge of us professionals, we fear the fault would be found more general amongst amateurs and cottagers. What a difference often in the little houses of the former in spring and autumn, not to speak of the lumber-room appearance in winter; and what a change from the trim garden of the cottager in April and May, and the weeds and decay and wretchedness too often seen in September and October. We recollect once that a company of gardeners expressed an earnest hope that the late Mr. Loudon would not take a tour among certain gardens in the autumn, as they were sure the masses of rotting decayed pea-haulm, and decaying and rotting vegetables, would furnish him with a whip for satire, which would be all the more keen because it was felt to be true and well-deserved.

Went on with forcing very gradually, as detailed last week, keeping the Peach-house from 45° to 50° at night, and 50° or a few degrees more in dull days, with a rise in sunshine to from 60° to 70°, with plenty of air, shutting-up early in the afternoon, and if sun heat can be enclosed, giving little or no fire on mild nights. Earliest vinery averaging 50° at night, buds beginning to swell. Vine-pit, a small place, buds breaking, from 55° to 60° at night. Some Vines in pots that had little but a cool orchard-house to grow in, are showing very fair, though I did not think the wood quite hardy enough for early work. Small Fig-house being full of plants is kept from 40° to 45° at night. All fruit trees in pots out of doors and in-doors in open, cool houses, such as orchard-houses, are plunged in stubble. This has not been necessary this season, as yet; but it is of little use protecting a pot when the soil is as hard as a brick. Giving air has required much nicety, not so much owing to cold, as to the force of the gales, which necessitated the pinning and fixing of sashes to make all secure.

PLANT DEPARTMENT.

Of this we have room to say so little that we must refer back to previous weeks for details, merely stating that walks were swept, and lawns rolled, a few more ashes put on Hollyhock crowns to send the water past, Pansies and Pinks and Carnations firmed, &c. A little dry soil or leaf mould should be ready, for putting as little cones over forward Tulips, if a severe frost should come; ditto as respects Hyacinths; and the surface of the ground intended for Ranunculuses and Anemones should be aired. Plant-pots were watered, cleaned, and arrangements made for having lots of cuttings put in—such as Verbenas, Geraniums, &c. In the grand establishment referred to above, the foreman took us to see a cold pit of Calceolarias, which seemed to have been done exactly as we described our own to have been done in the autumn. Although not a word was said to that effect, we could see at a glance that there was a

little rivalry about these Calceolarias among the young men, and we must own that they were in most excellent condition, and becoming fine strong plants for Mrs. Bird to lift and pot, or for our friend to transplant where he could give them good treatment, as houses and pits seem to rise whenever Fortunatus chooses to put the wishing-cap on. We would even say that the plants are, perhaps, a little better than our own; but as we do not wish ours to hurt themselves with crowding, for more than a month to come, we are rather more satisfied with them than if they had been stronger. We shall also, in three weeks or so, take a few cuttings off the points, as last year we felt the want of some small plants for outside.—R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

EVERGREEN FLOWERING SHRUBS FOR PALING (*G. K., Sevenoaks*).—Properly speaking, there are no wall, or espalier, or fence evergreen flowering plants. The *Escallonia macrantha* is only a conservative wall plant—that is to say, not sufficiently hardy for all places and all winters in Kent. For a garden paling 4½ feet high, a row of bush plants is all that is needed; and the two best evergreens with good flowers for the style of fence are *Berberis Darwinii* and *ilicifolia*. A hedge of *Cotoneaster microphylla*, kept to the height of your paling, is one of the most beautiful hedges we have ever seen when loaded with its coral berries.

COCOA-NUT REFUSE DUST (*W. H. F.*).—For all pot plants except Ferns and a few very rare plants and bulbs, use the same quantity of this refuse dust as the usual quantity of peat, leaf mould, and sand. The dust supplies the place of sand, leaf mould, and peat in general composts.

GUANO (*W. S.*).—From two to three hundredweight per acre is the proper quantity, the larger quantity being for a soil more than usually impoverished. It is most beneficial on retentive soils.

WATERING ROSES (*A Subscriber*).—Mr. Rivers says the best manure for Roses is three good substantial brown soakings of manure water during the winter months, while the Roses are at rest, and he ought to know what is best for Roses. Your gardener followed his advice.

FINE-FOLIAGED PLANTS FOR A GREENHOUSE (*Idem*).—There is no such thing as a greenhouse class of fine-foliaged plants. All such are now used out of doors in beds and borders during the summer months; and most of the stove fine-foliaged plants do better in the greenhouse, while the badders are out of the greenhouse, than by being kept more close than in a stove, and not so much confined.

BRITISH WATER LILIES (*L. T. V.*).—From the middle of March to the middle of April is the best time to plant the native Water Lilies; but February, or any time during the winter would do. The best way to do the work would be to procure large lumps of the roots with the soil attached, then their own weight would keep them down. The next best way would be merely to take so many of the fleshy roots and fix them in the mud, or, if the mud were too loose, to put thick lumps of turf from a clay ground over them, or, rather, to stick the roots in the turf first, and then place them in the pond. Eighteen inches of water would be deep enough to grow them; but we have had them in water much deeper, and in summer we have had them in a less depth for months and doing well.

GRAFTING ROSES (*J. J. Smyth*).—It is too soon yet to begin to graft Roses on Manetti stocks, unless you have a hot propagating-house to put them into. Mr. Beaton told us the other day he intended to graft Roses in February; but for ourselves, we should think the first week in March about the best time. In the nurseries, they have been grafting Roses since October in their hothouses. The best "liquid that causes cuttings dressed with it to throw-out roots," is rain water collected in shallow ponds at the lower corner of rich meadow land; and the best liquid to cause Vines to root is the same pond water, with gallon for gallon from a deep horsepond, into which the drainage of a farmyard is allowed to run.

ATRIPLEX HORTENSIS RUBRA AS AN EDGING (*R. W.*).—The Purple Orach plant that is used for flower-beds is *Atriplex hortensis rubra* of the catalogues, and is now to be had true almost everywhere. Most people train it down and nibble it to keep it to the proper height, but that is not the best way. The true mode of proceeding is to plant two rows of it 4 inches asunder, to make one row or line, and when it is 6 inches high to pinch-out the tops; after that to pinch-out at every second joint of new shoots, also to pluck-off every leaf as soon as it becomes rusty, which makes constant room for a succession of new leaves. We had it that way all last summer as fresh in September as at the end of May, and quite as low, without a single row being bent or trained.

ARGENTEA (*Idem*).—Argentea is only a second name in plant nomenclature, and there are a hundred kinds of argentea. The plant you mean is rather a nice plant, and the name of it is *Centaurea ragusina*; it is not better than *Cineraria maritima*. The one called *candidissima* is the finest *Centaurea*, but is dearer.

WEEDS ON LAWN (C. B.).—There is no way of destroying "Wild Marjoram," or creeping Buttercup, or Daisy, or Plantain, or any other weed on a lawn except by hand-picking, or unturfing the parts and relaying with better turf, although close and constant mowing does much towards exterminating them.

FUCHSIA SEEDLINGS (Christine).—Your Fuchsia seedlings are not hybrids, unless you had them between two wild kinds called species; they are cross-bred varieties by crossing two seedling varieties in-and-in, as all improvements in florists' flowers are obtained. Of course they will be such as you never saw before, just like our own seedlings, but better may have been already in the field; but no one can believe that of a seedling until the seedling itself proves it one way or the other. Your dwarf seedling, with the developed red leaves, is the most fashionable of them all. It intends to be a foliaged plant like Meteor, with which the Messrs. Carter made half a fortune last year; so you must look to it in earnest, but do not hurry it.

BOOK ON CONIFERÆ (T. Malcomson).—There is none better than Gordon's, "The Pinetum." It is published by Bohn, and, with its Supplement, includes information on the species known down to last year.

GARDENER'S EDUCATION.—The first part of "A YOUNG GARDENER'S" question Mr. Fish will attend to as soon as possible, but the question of lodgings has two sides. Where many young men are kept in a bothy, it tends to increase the number of gardeners, and the number is already too great for the demand. You would see the whole philosophy of the proceeding treated by Mr. Fish some years ago. The same nurseryman alluded to there has written the other day saying, "Oh, for a weeding-out!" The matter most likely will be taken up with other collateral subjects ere long. To those not answered privately, and who want good men at very low wages, Mr. Fish would refer them to some remarks made last year when describing the small garden of Dr. Neligan, at Blackrock, near Dublin. To see the full drift of his argument that article, and the one above on "attention," &c., should be read together. It was the least of his intentions, when recommending "attention," &c., to further the idea that a good gardener was to be had for so many shillings per week.

WEIGHT OF GRAPE AND STRAWBERRY CROPS (G.).—We once made a memorandum of such matters, but cannot now find it, and without it we would rather not answer the query, and more especially as such questions are seldom made except to serve a purpose. But for that, we would say 3 to 4 lbs. of Grapes in good-sized pots, and well done, and from 2½ to 3 ozs. of Strawberries. We have had much less, and in some fine pots much more.

MANURING STRAWBERRIES (A Subscriber).—If your plantation is in rows 2½ feet apart, a coating of well-rotted dung might be laid on the space between, and very slightly forked-in, not allowing the fork of the operator to descend more than 3 inches at the utmost. If this does not bury the dung, spread a little fresh mould on the surface, and the result will be satisfactory. It is better not to cut the leaves much, as they shelter the crowns. The leaves will die down when they are no longer wanted.

GERANIUM HELEN LINDSAY (Leaves).—We also want to know where Helen Lindsay, the new Lobelia's, and the other fine seedlings mentioned in our pages are to be had. But we must wait the dealers' time, and learn from the advertisements. We do not know of any new Lobelia which we have not described already, and until they are announced for sale we do not know where to look for them.

PEAT CHARCOAL (G. C.).—There was a manufactory near London, but we suppose it no longer exists, as we never see its advertisements. Write for information to "The London Manure Company," Bishopsgate Street.

NAMES OF PLANTS (R. F.).—1, *Asplenium trichomanes*; 2, *Pteris tremula*; 3, *Asplenium marinum*; 4, specimen insufficient; 5, *Lastrea filix-mas*; 6, *Cyrtomium falcatum*; 7, *Pteris bastata*; 8, *Doodia caudata*. All *Adiantums* are Maiden-hairs, and all Maiden-hairs are *Adiantums*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

WHO WILL BE WINNERS IN 1863?

MURPHY made a hit when he predicted the hard weather. It is said that the respected "Francis Moore, physician," who was supposed to preside over the compilation of a certain "Vox Stellarum," or "Loyal Almanack," published annually by the Stationers' Company, came into note, and was made by the fact that in a fit of ill-temper he predicted snow for the 1st of June, and there was snow. The almanac also gave an annual hieroglyphic. It was generally made up of a crown, coffin, and dragon. This sort of thing did for the dreamy times, when people travelled in coaches, and paid 2s. for a letter; but it is different now. Were it not that now and then a bad wife calls in a "cunning woman" to know how much longer the old man will live; or the frightened and half-repentant housemaid goes to the "clever man" to know when her "young man" will return the plate she lent him, and also whether he will surely marry her, we should say the days of predictions were passed. But we forgot the turf prophets—Vates, Agrippa, Sphinx, Oracle, Jones's Boy, the Lucky Baker & Company, who for the small "tip" of thirty postage stamps, will unveil the future in *re* racing, and tell you all the winners of all the great stakes. It was remarked of old, and we suppose it is true now, that he who can make the fortunes of others is generally poor himself.

Undeterred by that fact we assume the character of the "wise man," and we pierce the dark future, venturing to predict, even at this early time, the principal winners in the poultry world for 1863. "Ladies and gentlemen, make your game."

Some of our readers will recollect the days of lotteries. "Five of 30,000, six of 10,000, and all prizes and no blanks." The latter signifying that by investing £32 you were sure to win (P) a sum not less than £1! Nothing was beyond the capability of a ticket in the lottery. Only dream of a lucky number, or come in contact with it, and you were sure to win. We knew a man in a froat who slipped, and broke his leg opposite 311, Oxford Street. He bought a share of the number, and received guineas for pounds. You had only to buy a ticket, and then, if

"You'd portion a daughter in marriage,
Or live independent and free,
If you'd set up in trade, keep your carriage,
Or a member of parliament be,"

why, the ticket would do it. The ticket must be bought before the drawing. In lotteries, as in everything else, numbers of people knew the winning number after it was made public; but they kept their knowledge quiet till then.

Our prediction is, that poultry as an article of consumption will be dear this year, and they will be the winners who set about rearing and feeding their chickens now for April and May. We promise prizes to all those who in those two months shall provide and fatten chickens of the year to the weight of 3 lbs., or 3½ lbs. This is the neglected part of the poultry fancy, and we are aware we are wont to harp upon it.

We shall return to it. Our motive for beginning thus early is, that *now* is the time when the chickens must be hatched, or, at any rate, the eggs put under the hens.

NO ONE SHOULD BE AN EXHIBITOR AND JUDGE AT THE SAME SHOW.

In looking over your Journal of Tuesday last I find a list of awards at the Liverpool Poultry Show, also the names of the Judges. I find Mr. R. Teebay, of Fulwood, near Preston, as a Judge for poultry; also a Mr. R. Teebay that has taken the silver cup for Spanish fowls, also first and second for Brahma Pootras. It is quite a new idea to see a person acting as Judge and exhibiting at one time at the same Show. I consider Mr. Teebay would have been in his proper place as a Judge or an exhibitor, but not both at one time.

I am not accusing any one of unfairness or partiality, but I think it looks very bad for any exhibitor to be in the same room at the same time that the Judges are awarding the prizes.—AN EXHIBITOR.

[We noticed the fact mentioned by our correspondent, and thought it a great error on the part of the Committee. No charge is brought against Mr. Teebay, and he was Judge only of classes in which he was not an exhibitor, yet he was in the room while those classes were being judged in which he did exhibit, which ought never to be permitted. It gives rise to suspicions which are injurious to all parties.—EDS. J. OF H.]

WORCESTERSHIRE POULTRY AND PIGEON SHOW.

THE announcement of this Show, which is in our advertising columns to-day, is very satisfactory. It is to be held in grounds adjoining to and on the same days (July 20th–24th) as the Royal Agricultural Society holds its Exhibition at Worcester. The prizes are liberal, and we have no doubt the Show will be well supported.

SILVER-GREY DORKINGS.

ANOTHER breeder of Silver-Grey Dorkings, and one who has been well known as one of the largest and most successful exhibitors in that class, begs leave to indorse the Editors' opinion as to the impossibility of Silver-Grey Dorkings keeping pure in colour after the first moult. Take, for instance the statement of "ANOTHER BREEDER OF SILVER-GREYS," that the hens should be pure Silver-Grey, as free from brown on the wings as may be; the breast salmon colour, not, as is too frequently the case even in winning pens, with one hen, or sometimes both, with breasts nearer approaching to a brownish-white. His own words prove the difficulty there is in obtaining a pen of Silver-Greys pure in colour. I also beg to say I have been to most of our poultry exhibitions that have been held this past season, and yet have

not seen one adult pure-coloured pen shown. This proves how difficult it would be for judges to find pens sufficient to give three prizes in one class if they were to judge to a defined standard, such as "ANOTHER BREEDER" species; and such points we well know they ought to have to make a pure Silver colour.

My own experience is, that nine out of ten lose the nice Silver-Grey colour in the body and wings, or the hackle acquires a mealy-smoky colour, and then all the beauty of the Silver is gone.

Another proof is, that one of our most successful yards could not send one adult pen to any exhibition this last season. I must say it would be a paying affair to poultry committees to have the Silver-Greys judged by a defined standard, for how few of the prizes would be awarded!—J. D.

ADVANTAGE OF WARNINGS.

I HAVE not only derived much pleasure from the perusal of your Journal, but important instruction in gardening, and in the management of poultry it has considerably aided me in obtaining my present position as "first-prize winner in Ireland." But, above and beyond pleasure and profit, its oft-repeated warnings have saved me from a loss of nearly £8 very recently.

A very pressing order came from Bradford for some of my prize birds, but without a post-office order. I replied civilly that I adopted the English system of prepayment. The application was repeated three times so urgently and so speciously that had it not been for THE JOURNAL OF HORTICULTURE, I should have forwarded my birds.

I thank you very sincerely, and trust you may continue to prosper and increase in favour with the public.—E. D. C. D.

[The Rev. E. Cadogan was not so wary. He informs us that he sent four pullets and a cockerel to Mr. S. Matthews, Beswick, near Manchester, and cannot obtain the money for them, nor any answer to his applications. We can only repeat our astonishment that any reader of our pages can be induced to part with birds to a stranger without prepayment.]

JEDBURGH POULTRY SHOW.

THE annual Show of Poultry, Pigeons, and Canaries was held in the Corn Exchange, Jedburgh, on the 22nd and 23rd January, and was the most successful one ever held there. The entries numbered nearly a hundred pens more than last year, and its promoters now flatter themselves that it is likely to be a permanent Show.

The following gentlemen officiated as Judges:—For *Poultry*: Messrs. J. H. Smith, York, and A. Sutherland, Burnley. *Pigeons*: Mr. G. J. McLean, Edinburgh. *Canaries*: Mr. W. Rell, Edinburgh.

The following are their awards for Poultry and Pigeons:

SPANISH.—First, W. Ridpath, Edinburgh. Second, J. Shorthose, Newcastle. Third, W. Wilson, jun., Beith. Highly Commended, R. Teebay, Fulwood, near Preston; T. Ogilvie, Jedburgh. **CHICKENS.**—First, W. Wilson, jun. Second, W. Ridpath. Third, Mrs. White, Perth. Highly Commended, J. Williamson, Falkland. Commended, J. Shorthose; J. C. Wakefield, Glasgow; W. Sime, Cambus.

DORRINGS.—First, R. M. Stark, Hull. Second, Mrs. Grey, Grantham. Third, J. Stocks, Kirkcaldy. Highly Commended, J. Christie, Prestonkirk; J. Gileson, Dalkeith; Lord Binning, Mellerstain; J. Dixon, Bradford. Commended, Mrs. Dickens, Kelso; Sir J. D. Wauchope, Bart., Dalkeith. **CHICKENS.**—First, J. Stocks. Second, R. C. Nisbet. Third, Miss Milne, Otterburn. Highly Commended, J. Murray; Sir J. D. Wauchope, Bart.; J. C. Wakefield. Commended, Lord Binning. **PULLETS.**—First, J. Stocks. Second, J. Gibson. Third, L. Appleby, Darlington. Highly Commended, Miss Milne; H. W. B. Berwick, Helmsley. Commended, J. Jardine.

COCHIN-CHINA (Any variety).—First, J. C. Wakefield. Second, J. Shorthose. Third, Miss E. A. Aglionby, Wigton. **CHICKENS.**—First, Miss E. A. Aglionby. Second, Miss Milne. Third, H. W. B. Berwick.

BRAHMA POOTRA.—First, R. Teebay. Second, H. W. Scott, Forfar. Third, Miss Purves, Jedburgh.

GAME (Black or Brown Reds).—First, H. M. Julian, Beverley. Second, H. Adams, Beverley. Third, J. Hodgson, Bradford. Highly Commended, W. Easton, Jedburgh; Lord Binning. Commended, J. A. S. E. Fair; J. L. Anderson. (Duckwings).—First, H. Adams. Second, J. Hodgson. Third, J. Smith, Grantham. Highly Commended, D. Brown, Glasgow. **CHICKENS.**—First, Miss J. A. Aykroyd, Bradford. Second, H. Adams. Third, W. Boyes, Beverley. Highly Commended, T. Dodds, Halifax. Commended, J. Gibson; J. Anderson; J. Fiddes; W. Easton.

HAMBURGHS (Silver-spangled).—First, W. Cannan, Bradford. Second, J. C. Wakefield. Third, J. Dixon. (Silver-pencilled).—First, W. Cannan. Second, J. Dixon. Third, J. Robinson, Garstang. (Golden-spangled).—First, W. Cannan. Second, J. Dixon. Third, J. C. Wakefield. Commended, H. W. B. Berwick. (Golden-pencilled).—First, W. Cannan. Second, S. Smith, Halifax. Third, C. W. Brierley. Commended, J. C. Wakefield; J. Ness.

POLANDS.—First, H. Beldon, Bradford. Second, J. Dixon. Third, J. Paul, Glasgow.

BANTAMS (Gold and Silver-laced).—First, Lord Binning. Second, F. L. Roy, Berwickshire. Third, J. Anderson. Highly Commended, J. H. Frame, Overton. (Any other variety).—First, J. G. Park, Whitehaven (Game). Second, E. Hutton, Pudsey (Black). Third, Miss Purves (Game). Highly Commended, J. Anderson; J. Shorthose.

GESE.—First, Lord Binning. Second, J. U. Somner, Jedburgh. Third, Mrs. Bell. Highly Commended, S. Swan, Bush.

DUCKS (Ayle-bury).—First, J. Smith. Second, S. Swan. Third, C. Pease, Darlington. Highly Commended, J. C. Wakefield; A. Dunn; Lord Binning; W. Sime. (Rouen).—First, J. Gibson. Second, Mrs. Elliott, Hyndhope. Third, J. U. Somner. Highly Commended, J. M. Grainger. Commended, Mrs. Elliott. (Black East Indian).—First, J. R. Jessop, Hull. Second, R. M. Stark. Third, F. W. Earle, Prescott. Highly Commended, J. Dixon. (Any other variety).—First, E. Hutton (Wild). Second, Miss Purves (Mallards). Third, J. Patterson (Mallards).

TURKEYS.—First, Mrs. A. Guy. Second, J. Gibson. Third, J. James, Samiaston. **Poults.**—First, Mrs. A. Guy. Second, J. Smith. Third, J. Christie, Hailes. Commended, Mrs. Rutherton, Melrose; J. Jardine, Arkleton. **Hens.**—First, J. Smith. Second, J. Jardine. Third, J. Christie. Commended, Mrs. Guy; J. James.

ANY OTHER VARIETY OF POULTRY.—First, H. Adams (Black Hamburgs). Second, J. A. S. E. Fair (White Dorkings). Third, E. Hutton (Black Hamburgs).

SINGLE COCKS.

SPANISH.—First, W. Wilson. Second, R. Somerville, Edinburgh. Third, S. Corner, Monkswearmouth. Highly Commended, J. Shorthose.

DORKING.—First, R. M. Stark. Second, R. C. Nisbet. Third, J. Stocks. **COCHIN-CHINA.**—First, H. W. B. Berwick. Second, J. Shorthose. Third, J. Macauley, Edinburgh.

GAME.—First, H. Adams. Second, R. Payne, Marsden. Third, H. Beldon. Highly Commended, H. M. Julian; T. Dodds; J. Wilson. Commended, W. Toppin; W. Boyes.

TURKEY.—First, Mrs. A. Guy. Second, J. James. Third, Miss Bell, Cressford. Highly Commended, J. James.

SWEEPSTAKES.

BANTAM COCKS.—First, T. J. Wood, Stockton-on-Tees (Game). Second, S. H. Jeffrey, Jedburgh (Black). Third, C. W. Brierley. Highly Commended, G. J. Harvey. Commended, R. Corbett; A. Henderson.

SELLING CLASS.—First, W. Jeffrey (Game). Second, H. Beldon. Third, D. Murdie, Jedburgh (Spanish). Highly Commended, J. Anderson (Dorkings); C. W. Brierley (Polands); H. M. Julian (Game); J. Scott (Dorkings); Miss Bell (Turkeys); R. Patterson (Dorkings). Commended, J. R. Jessop (East Indian Ducks); R. R. Tulip (Golden-pencilled Hamburgs); J. James (Aylesbury Ducks); W. Scott (Dorkings); J. Smith (Aylesbury Ducks).

COTTAGERS' PRIZES.—First, A. Scott (Dorkings). Second, T. Oliver, Jedburgh (Spanish). Third, T. Climinson, Darlington (Duckwing). Highly Commended, J. Fiddes (Game). Commended, G. Ritchies; J. Sword; R. Sword.

PIGEONS.—*Almond Tumblers.*—First, A. L. Silvester, Birmingham. Second, M. Sanderson, Edinburgh. Third, R. Pickering, Carlisle. Highly Commended, H. Yardley, Birmingham. *Tumblers* (any other variety).—First, J. Bell, Newcastle (Kites). Second, J. H. Frame, Lanark (Red). Third, E. Somner, Kelso (Beards). Highly Commended, Miss Purves. Commended, J. W. Edge, Birmingham. *Fantails.*—First, T. C. Taylor, Middlesbrough. Second, Lord Binning. Third, J. R. Jessop. Highly Commended, W. Veitch, jun., Jedburgh. Commended, T. L. Jackson, Dumfries. (Considered by the Judge a magnificent class). *Pouters.*—First and Second, M. Sanderson. Third, J. H. Frame. Highly Commended, A. Scott. Commended, M. E. Jobling, Newcastle. *Nuns.*—First, W. Veitch, jun. Second, J. Jones, Edinburgh. Third, Lord Binning. Highly Commended, H. Yardley. Commended, J. W. Edge. *Owls.*—First, H. Beldon. Second, M. E. Jobling. Third, F. Key, Beverley. Highly Commended, Lord Binning; H. Yardley. Commended, Miss Purves; A. L. Silvester.

Turbits.—First, Miss Collier, Jedburgh. Second, J. U. Somner. Third, W. B. V. Haasbergen, Newcastle. Highly Commended, J. R. Jessop; T. C. Taylor. Commended, R. Pickering; A. L. Silvester. *Jacobins.*—First, T. Ellington, Woodmansey. Second, F. Key. Third, W. Veitch. Highly Commended, T. Ellington. Commended, H. Yardley. *Any other Variety.*—First, J. H. Frame (Barbs). Second, Lord Binning (Blue Priest). Third, J. R. Jessop (Trumpeters). Highly Commended, J. W. Edge. Commended, A. L. Silvester; T. Rule, Durham; J. Crew, jun., Jedburgh.

SELLING CLASS FOR PIGEONS.—First, W. P. Gray, Kelso (Turbits). Second, H. Beldon. Third, F. Key (Trumpeters). Highly Commended, J. R. Jessop (Archangels); T. Rule (Nuns). Commended, W. P. Gray (Jacobins and Almond Tumblers); M. Sanderson (Magpies).

In the Canary class there were about eighty entries, and the frequent bursts of melody by this band of songsters added materially to the other attractions of the Show.

NATIONAL COLUMBARIAN SOCIETY.

THE Annual Show of this rapidly rising Society was held at Anderton's Hotel, Fleet Street, on the afternoon of Tuesday, January the 27th. The room was so well attended as to be inconveniently crowded during the whole of the Exhibition.

Many of the birds were of very superior quality. The pen of *Almond Tumblers* exhibited by Mr. Jayne, was, in many respects, one of the very best we have seen for some time. In point of colour many were perfect standards, whilst in head and beak they were very superior. Mr. Corker also showed a very superior pen of Almonds. Mr. Smith's show of Black Mottled, Baldheads, and other Short-faced Tumblers was exceedingly creditable.

In *Pouters* the Show was very strong. Mr. Corker exhibited a pair of superior Whites; Mr. Bacchus a large number of very good birds, particularly remarkable for their length of limb and

feather. Mr. Hayne exhibited the same birds that he showed at the Philopisteron Annual Meeting.

In *Carriers* the Show was well represented, but we did not think the birds, as a whole, as good as those comprising the other classes. Mr. Betty, and also Mr. Feltham, showed some very good specimens, but the majority wanted the grace and style that is essential to elegance in stout birds.

In *Barbs* the Show was very strong, Mr. P. Jones and Mr. Johnson exhibiting many very good specimens of all colours—Blacks, Red, Yellow, and Duns. Mr. Morris's pair of White Owls were very good, being very good specimens of the small *petite* African variety that have come into such general favour.

There were also a few good *Turbits* and *Jacobins*. Nor must we forget to mention the Short-faced birds of Mr. Percival that fully maintained his reputation. Mr. Norman exhibited a very singular Owl, evidently bred between an imported White and an English Blue; the bird was somewhat irregularly pied, but would be valuable as improving the form and lessening the size of the ordinary Blues.

As a whole the Show may be described as being very first-rate in Almonds and Pouters, thoroughly good in Barbs, not so strong in stout birds; and, as a whole, deficient in Toys. It was unquestionably the best the Society has ever held. In some classes it ran the Philopisteron Show very close, and the older Society must look to its laurels if it would not lose its pride of place and the proud pre-eminence that it has held so long. At the same time there is plenty of room for the two Societies, each, in its own way tending to the advancement of the fancy—the improvement of the breed of the different varieties.

BELGIAN SMERLES.

In the account of the Philopisteron Society in your Journal for December 2nd, we are informed that "Mr. Tegetmeier appears to be devoting his attention to experiments on the homing faculty of the Belgian Smerles." As no Pigeons of the above name are known in this neighbourhood, several of our "gentlemen of the fancy" would take it as a favour if Mr. Tegetmeier would give us a detailed description of the features by which these Pigeons may be distinguished from others, and how they are supposed to be bred.—J. PARKER, *Burnley*.

[In reply to the inquiry of Mr. Parker, I will, in preference to giving my own description, translate some passages from a letter received from Mons. A. Lejuene, the editor of *Le Pigeon*, the weekly journal of the flying fanciers of Belgium.

Mons. Lejuene writes as follows:—"Smerles, the Short-faced Pigeons of the province of Liège, are remarkable for their sagacity, for the size of their heads, and the beautiful structure of their wings. At the age of two years they perform the distance from Bordeaux to Verviers in twelve hours, provided the sky is clear and the wind favourable, in bad weather returning the following day or the day after.

"The journeys of 150 leagues, as from Tours, Poitiers, and Châtelleraut are performed in eight hours." It may render this account more readily appreciated if I state that the exact distance from Tours to Verviers, in a straight line is 330 English miles, Châtelleraut being 365, and Poitiers 380 miles from the same place. These statements, it should be remembered, are not made at random, but express the rate of speed at which the great flying matches of the Belgian fanciers are performed.

The value placed on good birds of this variety in Belgium is shown by the continuation of Mons. Lejuene's letter, he says:—"A couple of young Smerles of choice quality and warranted bred from birds that have been proved, sell for 100 francs. Old birds fit for breeding, that have made long voyages, sell for 70 to 80 francs each; and a Pigeon that has carried off several prizes will even sell for 500 francs." In reply to the latter part of the inquiry, I would state that these birds are smaller than ordinary Dragons, of various colours, the most prevalent being Blue Chequers and Meales. The formation of the head in some strains resembles that of the variety known as "Owls," but the beak is not so short, though in all cases it is stouter than that of a common Blue Rock Pigeon. The great distinguishing peculiarity of these birds is the extreme breadth of the flight-feathers of the wings, the depth of the keel of the breast-bone, and size of the muscles which move the wings: consequently their rate of speed is extreme, and their powers of flight remarkable.

I do not know any more beautiful sight than to see a dozen of these birds dash off in the gales that have been so frequent,

and, after permitting themselves to be swept far away by the violence of the wind, return in the very teeth of the hurricane, with apparently as great a degree of quickness and ease, as though the atmosphere were a perfect calm.—W. B. TEGETMEIER, *Muswell Hill*.

EARLY POLLEN-GATHERING.

THIS day (29th January) the temperature is quite as genial and balmy as in a warm day in spring; as I write the sun is shining brilliantly, and all my bee-hives are in full activity. Pollen is being carried freely into most of them, and the scene so vividly described by Herr Braun, a translation of whose verses will appear next week, is being re-enacted with the utmost vigour in the garden of—A DEVONSHIRE BEE-KEEPER.

BEE BOTTLE-FEEDER.

If your intelligent and amusing Oxfordshire correspondent would only condescend to give the inverted bottle a fair trial, he would but act up to the spirit of the cognomen he has assumed, by making an immense stride, both upwards and onwards, in practical bee-keeping. Let him but once do this, and I feel certain that the very next Number of THE JOURNAL OF HORTICULTURE will contain, for the benefit of the million, full particulars from his pen of how to make a bee-feeder entirely without cost (for who but possesses an otherwise useless empty bottle?), and far superior to all others in every respect both for autumn and spring feeding.

A graphic relation of the circumstances attending the consignment of all his "drum-feeders" to the kitchen fire, and his "zinc-feeders" of every description to the melting-pot, might probably and most fitly conclude an article which would prove that in apian matters his *nom de plume* has some foundation in—TRUTH.

BEE MOTH TRAP.—Take a wooden bucket or other large open vessel, and fill it about two-thirds with water. Then put in a quantity of old honeycombs and set the vessel in the apiary, at night, near the hives. The bee moths or millers will be attracted by the strong odour arising from the vessel, and after hovering over it a while, will drop into the water and be unable to extricate themselves.—(*Bee Journal*.)

OUR LETTER BOX.

BLACK HAMBURGS (B.).—We should advise you to exhibit the bird with good comb and ear-lobes, if, as you say, the difference in colour of legs is only a shade. A bad comb, or a bad ear-lobe is a very serious fault; a slight difference in the tint of the legs is not so important as either.

PULLET UNABLE TO WALK (9 X.).—Either your pullet has sustained an injury in the back, or she is suffering from severe constipation; or she is cramped from being kept in a house with brick, stone, or wooden flooring. If the first, her recovery is doubtful. If the second, repeated doses of castor oil will cure her. If the third, alter the flooring, or you will never have healthy birds. In the last two cases, after action in the first of them, bread and beer are essential, and if she will not eat she must be crammed. If the cause be injury keep her quite by herself, and feed lightly, avoiding stimulants.

CRÈVE CŒUR FOWLS, &c. (A Constant Reader).—They are not mentioned in the book you name.

BUFF COCHINS (J.).—As you require first-class birds, we cannot do better than recommend you to attend Mr. H. Tomlinson's annual sale of pure Buff Cochins, which will take place on Tuesday, February 10th. It is advertised in our columns to-day, and we understand the selection will include some rare specimens of the breed, birds that have taken cups and prizes at most of our leading shows, some of the hens weighing nearly 11 lbs. each, and the two-year-old cocks and cockerels being particularly fine.

BLACK BANTAMS' LEGS AT DARLINGTON.—Mr. Hutton says they were not adults, but only fifteen weeks old; and he, therefore, considers the legs may have become white in three months, not three weeks as we stated.

HENS PECKING A COCKEREL'S COMB (Constant Reader).—We should separate him from his assailants until his comb is quite healed.

OPENINGS WHICH EXCLUDE QUEENS AND DRONES.—"Will Mr. Bevan Fox kindly give the breadth of the slits he mentions at page 709 for excluding the queen and drones from ascending into the supers?"

[The breadth of the slits generally recommended for the exclusion of drones from supers is three-sixteenths of an inch. I am not quite sure that a queen would not be able to force her way through; but have no doubt that an aperture of this width would be effectual for the purpose intended.—S. BEVAN FOX.]

PIG-KEEPING (A Novice).—In "How to Farm Two Acres," which you can have free by post from our office for thirteen postage stamps, you will find full directions.

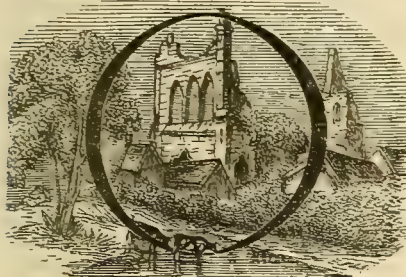
BUDGRIGAS (J. C.).—The Budgrigas are not Love Birds; they are the little Australian Grass Parquet. With reference to breeding them, we refer "E. C." to our Journal, New Series, No. 50. This is about the time of year they breed, and they should be kept in a room moderately warm.

WEEKLY CALENDAR.

Day of Mnth	Day of Week.	FEBRUARY 10-16, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
10	Tu	QUEEN VICTORIA MARRIED, 1840.	30.479-30.398	degrees.			m. h.	m. h.	m. h.		m. a.	
11	W	W. Shenstone died, 1763.	30.235-30.079	45-18	N.	—	26 af 7	3 af 5	3 m 0	22	14 30	41
12	Th	Henbit flowers.	30.018-29.973	44-30	N.	—	25 7	5 5	17 1	24	14 30	42
13	F	Sir J. Banks born, 1743. B. & G.	30.044-30.001	48-31	N.	.01	23 7	6 5	32 2	C	14 30	43
14	S	Valentine's Day.	30.052-30.033	39-33	N.E.	—	21 7	8 5	38 3	25	14 29	44
15	Sen	Shrove Sunday.	30.101-30.032	44-34	N.E.	—	19 7	10 5	35 4	26	14 27	45
16	M	A. Menzies died, 1842. B.	30.101-30.032	45-30	E.	—	17 7	12 5	19 5	27	14 24	46
			29.956-29.676	45-33	E.	.06	15 7	14 5	56 5	28	14 21	47

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 45.4° and 30.1° respectively. The greatest heat, 65°, occurred on the 10th, in 1831; and the lowest cold, 0°, on the 13th, in 1855. During the period 160 days were fine, and on 92 rain fell.

DO OUR SOILS DECREASE IN FERTILITY?



OUR opinion is, that cultivated soils not only do not decrease in fertility, but that they increase in productive-ness.

The subject is not now agitated for the first time,

but has been revived by a correspondent in the *Times*, who argues that the humus in soils is gradually exhausting, and that as it is exhausted those soils will become barren. Such, however, is an erroneous conclusion.

It was once believed, and is still believed by some men of science, that the soluble portion of humus—that is, of thoroughly decayed vegetables, which is called by them apotheme, is an actual food of plants, entering at once into their roots dissolved in the moisture of the soil. But modern researches have rendered it certain that apotheme is not thus absorbed by the roots of plants. Apotheme gives out carbonic acid which is absorbed by the roots, and they also absorb the salts and some other solids; but all in a dissolved state.

So far is humus from being essential for fertility, that some of the most fertile soils do not contain of it more than two or three per cent., and plants will thrive and be abundantly fruitful in soils where it is totally absent. Do not let us be mistaken as saying that humus is not a source of fertility, for it is so, undoubtedly; but other substances, such as animal substances, together with free exposure to the air by fallowing, will impart to a soil even a higher fertility than is imparted by humus.

Another section of scientific men—also entitled to respectful attention, for their leader is Liebig—believe that so far are plants from requiring humus in the soil, that they derive all their carbonaceous or combustible constituents from the air, and only their mineral or incombustible constituents from the soil. In consequence of this Liebig concludes that our lands are gradually becoming exhausted, and, eventually, will become barren, by being deprived of the mineral constituents required by plants. This dreaded mineral famine we believe to be as visionary as the dreaded humus famine.

A third section of authorities, having great antiquity and modern practice to sustain them, maintain that stirring the soil, and its long exposure to the air—in other words, well-worked and protracted fallowing—is the chief necessary to insure fertility. "What is cultivating a soil well? Ploughing it thoroughly. What is the second essential? To plough it. What is the third? To manure it," were the words of Cato, written more than two thousand years since; and Jethro Tull, and Mr. Smith, of Lois Weedon, have even gone beyond that

ancient, for they say manuring is needless. Such soils as those of Lois Weedon, a crop and a fallow alternately would not exhaust of their phosphoric acid and potash, probably, during the existence of more than one generation. But there are lighter soils which two or three years of such culture would exhaust of those minerals, and render them profitlessly unproductive.

We have no fear of our cultivated soils becoming barren either from an exhaustion of their humus or their mineral constituents; but neither do we look for succour to fallowing alone. We agree with Cato, for we think that good tillage is two-thirds of a soil's good cultivation; but we also think, as he did, that the other third is good manuring.

Above all, we know as a fact that our soils now produce far more per acre than they did five centuries ago, and that year after year farms now yield crops quite as abundant as they did in the time of the tenant's grandfather. There are—or, at least, we knew them thirty years since—fields in the Hundreds of Essex, which had borne crops of Beans and Wheat alternately for a time so long, that, as the lawyers say, "the memory of man runneth not to the contrary;" and we never met with a farmer or gardener of any soil in the United Kingdom, who, if he had labour and fertilisers at command, ever found the soil decline in productiveness. If we needed an illustration, we would quote the market gardens around London, where Potatoes and Cabbages are grown alternately, and have been so grown for a century.

We do not state without authority that our soils produce far more than they did five centuries since, for we have recorded in *Fleta*, who wrote about the year 1290, that the farmer could pay no rent, and must himself be a loser unless he could obtain *six* bushels of Wheat per acre.—(*Fleta*, ii., cap. 8.) So small a produce may be accounted for partly by the best soils being devoted to pasturage, flocks and herds being more required than corn to supply the culinary demands of a household whose chief food in those times was flesh meat.

As the vegetable portion of a household's regimen increased in proportion to that of the animal portion, so were the better soils converted from pasture to arable, which may in part account for our finding Harrison, writing in 1587, in the eighteenth chapter of his introduction to "*Holinshead's Chronicle*," stating, "Certainly the soil is even now in these our days grown to be much more fruitful than it hath been in times past." This he goes on to state was the case not only in England, but in Ireland, Scotland, and Wales; "so that each nation manureth her own with triple commodity to that it was beforetime." "Throughout the land (if you please to make an estimate thereof by the acre) in mean (average) and indifferent years, wherein each acre of Rye or Wheat well tilled and dressed, will yield commonly sixteen or twenty bushels, which proportion is notwithstanding oft abated towards the north, as it is oftentimes surmounted in the south."

Supposing these quantities to be correct, though there

is reason to believe them too large, yet there is evidence that the fertility of the soil has gone on increasing since then, for the lowest average produce of Wheat per acre is now stated to be twenty-eight bushels.

Our opinion that our cultivated soils increase rather than diminish in fertility, has not been lightly formed, but is founded not only upon the evidence of the oldest cultivators, but upon facts which seem to us conclusive.

It is quite certain that whatever is taken away from the staple of a soil by a crop grown upon it can be restored to that soil by manures, and by the natural depositions from the atmosphere; and we believe that there is no more well-ascertained illustration of the balancing which pervades all nature than that THE SEWAGE OF EVERY HOUSEHOLD IS MANURE SUFFICIENT FOR THE PRODUCTION OF ALL ITS VEGETABLE FOOD—a fact that cannot be too generally and continually urged, and in support of it we have this testimony of Dr. Lyon Playfair:—"Human excrements contain (with the exception of one ingredient—silicate of potash) all the ingredients essential to fertility. Estimating the amount of the effete matter of one man at an amount so low as 547 lbs. yearly ($1\frac{1}{2}$ lbs. urine, $\frac{1}{2}$ lb. fæces daily), so rich is this manure in phosphates, that the collected excrements of two men would suffice to manure an acre of Wheat or of Peas; or that of one whole acre of Turnips, supposing the green herbage were returned to the soil. In fact, when we recollect that a pound of urine contains all the ingredients necessary for the production of a pound of Wheat, it is incredible folly to allow all the valuable refuse of our large towns to run to waste, when at the same time we are sending fleets to Ichaboe and Peru for what we are wasting at home."

Dr. Playfair might have added with equal truth, that the excrementitious matters we are thus fetching from other regions of the world are far more expensive, yet not more powerful, as manure, than the excrementitious matters of our own sewers. On this point we will only quote the statement of one of our best practical farmers, the late Mr. Smith, of Deanston, who thus details his experiments made purposely on a meadow in Lancashire, by applying to separate acres at the rate of 15 tons of farmyard manure per acre, 3 cwt. of guano, and 8 tons of sewer water.

	£	s.	d.
Cost of manuring one acre with sewer water.....	0	12	9
Ditto with guano ($2\frac{1}{2}$ cwt.) at 8s.....	1	0	0
Ditto with farmyard manure, 15 tons, at 4s.....	3	0	0
Ditto with sewer water.....	0	16	6
Ditto with guano (5 cwt.) at 8s.....	2	0	0
Ditto with farmyard manure (30 tons), at 4s.....	6	0	0

The guano and farmyard manure "in their effects were found to be inferior to the sewage water."

The same law, we believe, prevails with regard to all herbivorous animals, and that their excrets, aided by the atmosphere's nitrogenous depositions and its carbonic acid, fully restore to a soil all that they withdraw from it in their food.

When we add to this, that annually fish, seaweed, guano, oil cake, ashes, bones, coprolites, and other animal sources of phosphates, as well as bread stuffs, sugar, tea, and other foods, are continually being imported, or won from the sea, we discern sources of increased fertility, but none of impoverishment.

It is true that in towns the human excrets are for the most part wasted; but this proves no more than that if they were all husbanded as they are in China, our soils might be made still more fertile, and, as in China, capable of supporting a population still more numerous.—J.

NEW PLANTS FOR THE COMING SEASON.

THE first plants on my own list for trial next summer are three kinds of Calceolarias; the Calceolaria Aurea floribunda to be used as a sample plant to compare the others with under the same treatment, soil, and situation.

Before going farther, let me protest against a common error in judging of new plants for bedding purposes. A very sensible man, out of every degree of sensibleness from a florist to "the man" in the garden, obtains a new plant or plants, and it reaches him in the best condition and he does his best by it; but the season is against him or is too much in his favour, and in either case he can only put out his new comer or comers in some place by themselves and watch them. No doubt the worst place about the garden is not where people put out their trial plants. But no doubt, also, unless there are as many

plants of some old kind for which the new are rivals put out on the same spot of ground as the new ones, and under precisely similar conditions as to the size, age, and health of the plants, the trial and the judgment on the issue are both wrong and of very little value, and yet the person who conducted the trial may be one of the most conscientious of men; he only went the wrong way to work without knowing it, and he is not aware that his decision, in consequence, is worse than useless, for it may be most mischievous. Then, knowing all that, the first thing I do when I have to trust to another's choice of a new plant, is to ascertain what means were within his reach by which to form his judgment. Of his judgment I may not have the least doubt; but I am very doubtful whether or not some of my friends' judgments ever had a fair chance of being in accordance with the nature of the subjects under experiment.

If I took six plants of Tom Thumb when it first came out, and gave them the best position on a trial border, and compared the rise and progress of the new seedling with the advance of Lady Alice Byng, or of the Crystal Palace Scarlet, or of the three kinds of Frogmore Improved, which I had then out in the beds, and which were the only sorts then against which Tom Thumb could compete on fair terms, my judgment might do for myself, but it could not be a fair judgment of an experiment to come before the public. The least I ought to have done would have been to have given an equal chance to as many of Tom's rivals as to himself on the same border, and all the conditions to be exactly alike as to age, strength, and health of the plants at the first start: therefore, whatever the season might be, all the plants had their share of it under the same circumstances, and the judgment could not be far wrong in so far as this—that if the season were very bad, one or two of the kinds might stand it better than the rest; or if it were a most favourable season, the rest, or one of them, might be the superior for that season and seasons like it.

So you see there is more than meets the eye, at first sight, in a faithful experiment to test the value of the simplest plant that one chooses to deal with if in earnest about it.

Well, then, I have so many plants of Aurea floribunda Calceolaria, and last summer our Floral Committee gave their highest award for such plants—their Certificate of Merit for Calceolaria Cloth of Gold to Messrs. Downie, Laird, & Laing, as you would have seen in the last Number of this Journal; and the year before last our Floral Committee gave the same award for Calceolaria canariensis to Mr. Smith, the great Fuchsia florist of Hornsey Road Nursery; and these two Calceolarias I shall engage to match against Aurea floribunda for a thousand guineas, or a thousand to one that the three will have the same and the best treatment that I can give them. But, perhaps, you are not aware that I am equally interested in the three kinds. I was the first person to prove to the public the use and value of Aurea floribunda in the Experimental Garden. I had it direct from the raiser through Mr. Turner, of Slough, for that purpose, and I had to thank Mr. Turner for giving me a lift in the matter. The plants were hurt by a railway run, or crash, or something, and Mr. Turner kept and nursed my Aureas for me until they were fit for a prince to plant. I have been always proud of Aurea ever since, but it shall be on the same level now.

Last summer was so bad for Calceolarias, that many made up their minds to discard this, or that, or these old Calceolarias, and take in some of the new ones. I recollect looking over from the galleries of the Crystal Palace with Mr. Gordon, when he told me he would plant no more of his principal sort, the best of the Rugosa breed. The only one which held the flowers on there against the drenching rains was Gaines' Yellow; and now that I think of it, I must have so many of Gaines' on the opposite side to Aurea floribunda, with the canariensis, and the Cloth of Gold in the centre.

The reason why I am so much interested about these two is, of course, from the fact of their having their character stamped by the Floral Committee. But speaking of the Crystal Palace broke the strain of my thoughts on the matter, for there is where we all had the opportunity of seeing and of believing in the most beautiful and most distinct new Lobelias of the dwarf blue race that ever yet appeared in one season. One is called after Sir Joseph Paxton by permission, the other after Mr. Gordon at my request; and I have another one from down the country, of which I thought very highly, from a chance blooming, but not so much as to determine its degree in the scale of merit. So I shall have three capital dwarf Lobelias to decide

upon; and I am quite certain myself each one of the three is at least as good as the best variety of *speciosa*; but, what is more fortunate, neither of the three will be a rival to *speciosa*. You might make a bed of any of the three, and put *speciosa* round it for a contrast, just as one could make a bed of one of the *Cerastiums*, and put the other round it as an edging—which plan, I believe, will be adopted next summer at Hampton Court.

We may as well keep to the edging plants and finish them first. The grand accident new edging plant of last summer will most assuredly be a great favourite in a short time, I mean *Arctotis reptans*. This I have proved myself, and I sent it to some of the dons on my way to one of the exhibitions. I took up a full yard of edging of it on my shoulder, to try and win a prize with it; but instead of that, I got well nigh the end of my journey before I was half way up the colonnades at South Kensington. Talk about garotting and night work, I had to share my prize edging plant amongst so many smart men, that I had no more left than what I had intended for Mr. Eyles. I also sent it to the Botanic Garden, Regent's Park, to the Crystal Palace, and they have it at Kew, so it will be out about London in abundance; and all I need now say about it is, that seedling plants of it do not do well the first year, but the bulk of the people must have it from seeds, if it is in the market, in order to obtain a stock of it. Of all my store plants, in the cold pit, this is now the most promising to keep that way from autumn suckers, or rooted shoots, for every inch of it roots as freely as Strawberry runners in the edging. I have only one store-pot of it, and if it bloom with me that way, I shall take the pot to the Floral Committee, to let them see what a nice flower it is, besides being the poor man's best pot edging plant, one of the easiest to manage, and good enough for a prince.

The next lot with which I mean to be smart this summer is a lot of the best Fancy Pansies, beginning with the Duke of Cambridge's fancy flower, the new belted Pansy called *Aurea marginata*, for which the Floral Committee had given a prize to the Messrs. Downie, Laird, & Laing, and which is a novelty even amongst the novelties of the Fancy race—a race which is much harder and more easy to manage than the florists' Pansies, although I missed the right way of growing a collection of them two years back, and blamed the cocoa-nut refuse for it.

Mr. Dean, of the Bradford Nursery, the great authority for this class of plants, has told me the right way to grow them, and I saw in a moment where my way was wrong altogether. I thought of staking them because they grew away so fast in this stuff; but no, he told me the right way is to train them down, and to put a little fresh compost from the potting-bench refuse, twice during the summer, among the shoots into which they would root, and continue on blooming to the end of the season. That is just how I shall do them this season, for I mean to go into them in earnest now that I have so many of the best new ones—such as *Harlequin*, *Impératrice Eugénie*, *Princess Louise*, *Mulatto*, *Leotard*, *Pacha*, *Prince Napoleon*, *Adelina Patti*, and such good sorts; and as soon as the double "Good-Gracious" comes out, I must have it of course. Then with my stock of the *Magpie Pansy*, my *Yellow Perpetual*, which I had from Mr. Sims, Foot's Cray, Kent, nine years back, and which never yet failed from April to October, and the blue *Trentham-bedder Pansy*, one of the best and most sure of them all, I ought to be pretty well off in this class; and of course, also, I shall push hard to find out rivals, and never cease until there be a bed or two of the race in every flower garden where there is room for another bed.

Then, I have just received by the last mail from New York a splendid new strain of striped and fancy-marked *Petunias*, which will Merrimac Mrs. Ferguson, and all Mr. Williams' and Mr. Holland's new strains, if the seeds come true to the plate of figures of them which has been sent me with the seeds by Mr. Buchanan, who had the celebrated sale of Cacti at the Baker Street Bazaar in 1840, and whose acquaintance I then made as a bird of a feather. He reads this Journal regularly in New York, and likes it more than any of our London Pride for tales about "breeding-in-and-in and crosswise with long stamens and with short, to say nothing of our backgroounds, middle masses, or front rows in the ribbon system," and all the rest of it. The *Petunia* seed was accompanied with the request that "if there is anything there I should like to have I had only to mention and I should have it." Very good, and I take Mr. Buchanan at his word. Send over by the next steamer the two Presidents to me, and if I can get them to shake hands and give up the darkies, I shall

go over and settle about the stars and stripes on the ribbon system of harmonising for effect, and thank him for the chance as much as for sending me this new strain of striped *Petunias*.

D. BEATON.

SUCCESSION OF PEAS—SMALL GREENHOUSE—HYACINTHS.

I HAVE to thank many kind correspondents for their information on the above subjects, and hope they will take this as a reply to the notes they have been good enough to write. With regard to Peas, I rejoice to find that I am not singular in my dislike to the large sweet Marrows, which, by-the-by, I think are quite as good raw as boiled, and are fit food for such strong stomachs as can digest them. Various suggestions have been made as to keeping-up a succession, but the one which commends itself most to my notions is to make Sangster's No. 1, *alias* Daniel O'Rourke, *alias*, &c. (for it has many names), the first crop; to sow for the second Bishop's Dwarf Longpod, and, at the same time, the old Blue Scimitar, and that then the Blue Peas will come in about a fortnight after the Bishop's; and then to sow, for a succession during the summer, the Blue Pea. My object was not to know when to sow Victorias, Ne Plus Ultras, &c., but to get rid of them altogether, and to substitute some Peas which, neither so large nor so sugary, might be gathered throughout the season. I do not think that I should care to have Sangster's No. 1 all through the season. It will do very well at the beginning, and also for a late sowing to come in at the very last; while my recollections of the Blue Peas induce me to think that I should not require anything higher-flavoured than they are. High cultivation, oftentimes for the sake of size, symmetry, or some fancied quality, destroys flavour. I would infinitely prefer a leg of Cheviot mutton to one off the finest and most symmetrical Leicester that ever received a first prize. So would I select a sirloin from a grass-fed ox, to one off the fattest and ripest (what a term!) that Baker Street ever saw; and so I am Goth enough to prefer the small, delicate-flavoured Peas to the large and rich ones. It may be most desperately bad taste—might put me into the "Index Expurgatorius" of the "Almanac des Gourmands;" but it is my misfortune if it be so, and I can only rejoice that some others think with me.

As regards the greenhouse and its ventilation, I should have, perhaps, said that as my little garden is merely a piece taken off a field, without any ornamentation, shrubs, trees, or anything of the kind, my object is to have the very plainest and cheapest one possible; anything else would be completely thrown away. This must be my answer to Mr. Cranston, who very kindly sent me both a sketch and estimate of one. Nothing can be more beautiful than his designs, giving, as they do, an ornamental appearance to what is generally speaking a very unornamental object, and, so far as my limited knowledge of such subjects goes, the ventilation seems excellently managed; but then, on the score of expense and unsuitability to my location, I must, however reluctantly, abandon all hope of erecting such a house.

To a brother clergyman in Dorsetshire, I am indebted for a communication which is more in my way. He, too, like myself is exposed to the rude assaults of blustering Boreas; and has, therefore, been led to contrive something which shall give him an opportunity of ventilating without being blown away. His roof is, I take it, although he does not mention it, a fixture, such as I intend mine to be—that is, made simply of bars without sashes, and glazed with large panes. This will prevent much drip; for it is the force of the S.W. wind, driving the rain literally into the house, that I have to avoid. Last night it rained a downpour, but then the wind was from the N.W., and my house hardly leaked at all; while, with half the quantity of rain from the S.W., it would be dripping all over. His ventilation is managed at one end and the front, although "DORSETSHIRE" prefers it at both ends when it can be had. His front sashes at the opposite end to the door open like a door on hinges—in fact, like a cottage window, and are kept open at any angle by ordinary screw cottage fastenings. The ventilation at the end is managed by having a sash or sashes to open by means of a simple contrivance with two pulleys, and this can be done by any one standing on the floor of the house. It is, I think, clear that his house is larger than what I intend to put up, but this does not alter the principle; and it seems to me to combine simplicity and economy. As regards

heating, I do not suppose any plan is preferable for so small a house to that of the old brick flue; and by altering the furnace, and bringing it a little farther on, it will adapt itself to the increased size of the house. I have thought at times of hot water; but there seems to me to be so much power wasted when even the smallest boiler is applied to a house of this size, that I have given up the notion, especially as my only object is to keep the frost out, and I have no ambitious designs of forcing or extensively propagating.

I may take the opportunity while the pen is in my hand of answering "R. A. H.'s" questions as to the Hyacinths he intends exhibiting. I think he did wrong when potting not to have put a larger proportion of manure. One-fourth is not enough. I generally put one-half, and have known some growers make it even three-fourths. However, he must now make up for it by liberal supplies of liquid manure. I should prefer this, I think, to guano water, considering the circumstances under which they were potted. I am myself using guano. They should when taken out of the ashes be gradually inured to light, and as the Exhibition at which he intends to exhibit them is not to be held until April, they will not require any heat but rather retarding, especially if this extraordinarily mild season continue. One great object he should bear in mind, is to have good foliage as well as good bloom, and that, therefore, he should endeavour to avoid drawing the plants, and thus prevent the leaves from hanging down and falling over the sides of the pots, than which nothing can be more ugly.—D., Deal.

WHAT DESTROYS CROCUSES?

As our Crocuses have come above ground this year, they have been attacked by some animal, but we cannot ascertain what. The stems are cleared of earth all round, and then cut about half an inch from the root, the roots not eaten, and nearly the whole cut stem left on the ground; the mischief is done at night. We attributed it at first to mice, then rats; but no sign of these could be discovered, and none were caught in the traps set. These generally eat the root as well. The mischief continues as the flowers advance, and of late the plants are attacked as if by a pig, the holes are so large about them, still only the stems are cut as before described; all our Crocus-borders are destroyed. Can you suggest the cause or a remedy?—W. W. BENNETT.

[The sparrow does the conjuring, and as it would seem through sheer mischief, but in reality only to sip the nectar at the bottom of the tube of the flower, while the flower is yet in bud, the instinct of the bird being thus exemplified.]

CULTURE OF BEGONIAS.

VARIETY is the most distinguishing feature in this class of plants—distinct variety in the colours of the flowers and a pleasing variety in the markings of the foliage, which are all displayed with a graceful habit of growth during the dull winter and spring months, when flowers, like many other things when rare, are most valued. The majority of Begonias being natives of South America and the West Indies require stove temperature. Some new and good sorts have of late years been produced by cross-breeding, and it is probable that by that means a more hardy race will be created. Mr. Frost, gardener to E. L. Betts, Esq., of Preston Hall, near Maidstone, raised a cross called *Begonia prestoniensis* by impregnating *B. cinnabarina* with *B. nitida*; the flowers are abundant, of a brilliant scarlet, fragrant as a rose; and the plant has a shrubby habit, and succeeds well in the greenhouse.

If collectors of plants were more particular in giving us an account of the localities in which the species were generally found we should not be compelled to grope our way in the dark so often as we are. To say that many species are natives of South America is giving us a very extensive range of country to investigate. The variety of climate from the summit of the lofty Andes covered with snow to the valleys luxuriating in a tropical temperature, with the collateral influences produced by proximity to the sea or to rivers, to lakes or to mountains, should suggest to every collector the necessity of giving such particulars of situation, soil, &c., as would lead us to the treatment most suitable for each. It was, I suppose, by some mere chance that we have discovered, after many years of haphazard treatment, that the *Begonia nitida*, introduced from Jamaica, will do well

in a greenhouse temperature. The *B. Evansiana*, *syn. discolor*, introduced from China, is a species very frequently found in great perfection in the cottagers' windows. By cross-impregnation with such parents of a comparatively handy constitution we shall ultimately attain a class of Begonias endowed with all the properties of the best sorts, and amenable to greenhouse treatment.

The Begonias may be divided into three classes—the fibrous-rooted, the herbaceous, whose stems die down annually, and the bulbous-rooted sorts. The most useful particular with which we have been favoured by collectors is to know that they are generally found to inhabit moist, shady, and secluded situations in their native countries, where they are partially sheltered from the direct rays of the sun and from cutting winds. In such situations it is reasonable to suppose that leaf mould is the soil in which they flourish. With us they delight in a moist atmosphere with a slight shade on hot sunny days, good drainage, an abundance of water in their growing season, and half leaf mould and loam. They grow luxuriantly in a soil composed entirely of decayed vegetable matter, but in that they are very liable to rot-off at the base of the stem. Being of a most succulent nature they would luxuriate in the atmosphere of a vapour-bath, as in their native countries, without the necessity of requiring much root-action. Stopping or pruning they will not bear, and the only occasion on which the knife can be used with safety is to cut away the old stems from all that throw up strong shoots from the roots every year. To counteract the tendency to rot it is advisable to slightly elevate the stem in the centre of the pot. The sorts that form tubers, such as *B. Evansiana*, *diversifolia*, and *octopetala*, should be dried-off cautiously as the season of growth declines, and stored away in any cool dry place for three or four months, when they may be started and repotted into fresh soil. About the beginning of October, when the leaves of some begin to fade and others assume a languid appearance—indications of the natural rest that they require—water should be gradually withheld, and entirely discontinued by the first week of November.

Although many species would remain green and healthy during the winter it is not in accordance with the natural habits of the plants to keep them in a continuous state of growth. Indeed, all plants want a season of rest, more especially the natives of tropical countries where sun and light are more intense. In our dull and generally unless winter months the growth that is made by the application of artificial heat is only the elongation of the parts without maturity or vigour. A continuous growth is an abortion. A mature and properly elaborated vigour of growth is essential to the production of flowers, and a premature and excessive development of the branches and foliage at such a season is injurious and often destructive to the desired effect—the production of flowers.

The majority of the sorts are easily propagated by cuttings; but by many growers seedlings are preferred as not being so liable to rot-off at the base of the stem. The seeds when ripe are scattered upon the surface of light sandy soil, covered with a bell-glass, and shaded.

The following is a list of good sorts:—

- Begonia xanthina*.—Conspicuous for its yellow flowers.
- B. prestoniensis*.—Brilliant scarlet.
- B. cinnabarina*.—Citrone-coloured flowers.
- B. fuchsoides*.—Scarlet.
- B. rubrovenia*.—White, streaked with red.
- B. Thwaitesii*.—Foliage of green, deep red, purple, and violet colours.
- B. Fischeri*.—Blush-coloured flowers; foliage bright crimson beneath.
- B. rupestris*.—Pink flowers; leaves marked on the surface with white silvery-looking spots.
- B. Martiana*.—Pink flowers generally in pairs, but in great profusion.
- B. zebrina*.—Pink flowers; leaves bright green, smooth and shining, marked with dark green shades on the under side.
- B. argyrostigma*.—Flowers flesh colour; leaves dark green, singularly blotched on the surface with silvery spots.
- B. odorata*.—Pure white flowers.
- B. nitida*.—Pink flowers; straggling habit of growth; suitable for trellis.
- B. sanguinea*.—Dark purple leaves; white flowers.
- B. cruenta*.—Bright scarlet flowers; stems of a dull crimson colour.

- B. ulmifolia*.—Blush-coloured flowers.
B. castaneifolia.—Blush-coloured flowers; neat habit of growth.
B. semperflorens.—White flowers.
B. cuculata.—White flowers; stems slightly tinged with purple at the joints.
B. papillosa.—Pink flowers.
B. digitata.—White.
B. rubra.—A beautiful red not only in the petals but also in the capsules.
B. platanifolia.—Pink and white.
B. heracleifolia.—Pink blossoms, low habit, and dark green ivy-like leaves.
B. Barkerii.—Immense leaves, and a large head of odoriferous flowers. Increased by seed.
B. hernandiæfolia.—Rosy-red flowers.

W. KEANE.

HEATING HORTICULTURAL BUILDINGS.

MANIFOLD as are the modes by which glass structures and other places devoted to horticulture are heated, the subject is certainly far from being well understood. True it is that those who have had extensive practice in heating may be able to give opinions of considerable weight on the matter; but there are many who may not have obtained such experience, and, consequently, may be led into error—not, perhaps, always in neglecting to provide sufficiently powerful heating apparatus, but by running into needless expense in providing it in a manner not required. This is also a subject in which the most experienced sometimes make mistakes, therefore I offer no apology for making some observations upon it; not that I have anything to advance in contradiction to the able communications Mr. Fish has from time to time put forth, but some additional facts bearing on the case which, if not new to the practical men who keep pace with the times, will at least be interesting to the general reader.

I believe it will be admitted by all, that the best-constructed heating apparatus yet erected falls far short of supplying the heat that ought to be furnished by the fuel consumed; in fact, so extensive is the waste, that the statements of the learned men who have treated on the subject seem almost startling, but it is questionable whether anything even like the results they assume to be possible will ever be secured in practice. Nevertheless, there is every reason to believe that very considerable improvement may yet be made; and although the combustion of a pound of coal may never effect the wonderful changes that men of science assert it ought to do, it may yet be so economically used as to impart a greater portion of heat to the object wanting it than it now does; and if a mode of doing this without entailing additional labour or cost can be found, the discoverer will deserve well of his fellow men.

The present notes, however, will be devoted to the application of heat to such purposes of horticulture as tend to impart heat to the atmosphere of a structure adapted to the cultivation of plants. In thus limiting its operations, we must also fetter it in another way as well. The heat supplied must not contain any gases hurtful to vegetation, but must simply be a good and agreeable warmth, free from any impurity; neither must it be too dry nor yet too moist; in fact, it ought to be completely under control in these last two respects, and at the same time the simplicity of the apparatus must be such that any rustic may be safely trusted with its management. It must, besides, require no particular attention calling the operator very often to it, for there may be times at which the man or boy who has the charge of such works may want to be somewhere else; and if an apparatus for heating requires attention every hour or two, there is every probability of this duty being often neglected.

In the cultivation of exotic plants, it is often necessary to increase the temperature of the atmosphere they are placed in to something like that of the country they came from; or, at least, we are obliged to prevent that atmosphere from being cooled down so low as it would be in our climate. To prevent this artificial heat has to be applied; and whether this heat be in the shape of fermenting material or fire heat, the object must be accomplished. Other modes of heating have been suggested, as making use of the heat from the sun's rays; but we have not yet found the way of concentrating the spare heat that might be so obtained, and giving it off at night, although this is far from

being so improbable as some may suppose. Neither has a much more difficult problem—that of taking advantage of animal heat, which was suggested by some one, been hitherto solved. If I remember right he proposed to have a forcing-house, or something of that kind, immediately in front of a row of cattle tied-up and feeding. The warmth from their bodies and their breath together, he thought might supply the heat required. How such a system would suit the owners of stall-fed oxen, I must leave them to say; and how the animals themselves would enjoy the tantalising prospect of green herbage, rich, tempting, and pretty, but out of their reach I cannot aver. It is almost superfluous to add that the plan has never yet worked itself into practice, neither is it likely that it will be adopted by any but by those anxiously bent on novelty; for it is probable the improved modes of using fire heat will drive all others out of the field. I believe there have been other modes of applying heat suggested, but it is needless recording them. Let us, therefore, see in what way the two most available modes of heating, which are fermenting materials and fire heat, can be used; the latter, of course, including hot water, &c.

To the fermenting materials supplying heat it is hardly necessary to advert, as local circumstances generally point out which must be used; and useful as such an assistant is to the forcing-gardener, there are many plants which cannot be carried through the dark days with them alone; for the steady warmth given off by a bed of tan, dung, leaves, or similar substances is not capable of being suddenly increased to meet the fluctuations of temperature not unusual at Christmas or afterwards. A sudden depression of, perhaps, 30° in the external atmosphere, tells also to a certain extent inside a glass structure; but fermenting material alone is incapable of any increased effort likely to compete with this diminished temperature. In the generality of cases, therefore, requiring a steady high temperature in winter, it is necessary to call in the assistance of fire heat as well; and the latter being completely under command, and being used more or less as occasion requires, the best results follow, the union of the two being certainly better than either alone. Although there are plenty of cases in which fire heat does the whole, and that very well too, still a body of fermenting material has advantages which no artificial combination in which fire, water, and iron are alone employed can afford.

FIRE HEAT.—Having adverted to the loss in all cases entailed on the user of fire heat, I may here add that no one loses so much as the forcing-gardener. With him combustion goes on in one place, and the air required to be heated is separated from the fire by large masses of brickwork. Possibly the fire is made to do duty on some boiler, which sends its warmed fluid in circulating currents through some long and intricate series of piping, which in turn has also to be warmed, in order to afford the tardy warmth given off to the atmosphere either above or surrounding the pipes. Of course all their auxiliaries or appendages have to be warmed by the fire before any heat is given off, and, by the time the fire heat reaches the farthest object it has to be applied to, it is divested of much of its warmth. This is the evil, and how to remedy it has puzzled the learned in such matters for many years; and although much improvement has been and continues to be made, by the better construction of fireplaces, the advance in heating horticultural buildings falls far short of what has been done to improve the construction of sitting-room fire stoves, kitchen ranges, &c.; while gas, Arnott, and other stoves to heat shops, halls, and public buildings have likewise undergone many improvements.

Although the subject is, perhaps, not quite in order here, I may say that one of the best heated churches I was ever in is warmed on what is called Sylvester's plan of heated air. The apparatus was made, I believe, at Trowbridge—at least it bears that name—and is unquestionably a great improvement on all the modes of heating such edifices I have ever seen in use. Of its economy I can say little; but should suppose, by its warming such a large volume of air, that the fire heat must be carefully employed. Of its applicability to horticultural buildings I can also say little; perhaps, however, this mention may draw forth more precise information on these points.

Heated air has often been held in dread by the gardener, as likely to contain some noxious gas fatal to his plants; but, in the mode of heating I allude to, it has none of the Arnott's stove stifling smell so often complained of, and it is possible that for forcing purposes it could be still further improved or purified. Heated air is unquestionably the most economical way that fire heat can act on an atmosphere which it is neces-

sary to warm; and as soon as such an application of fire heat can be effected without injury to the plants, a great advance will have been made. A talented, though somewhat versatile, writer on horticultural matters suggested, many years ago, the propriety of trying an open fire in a forcing-house, and reasoned hard on the probability of its answering; but I have never heard of its having been put in practice, neither is it likely it could be made to act for all the purposes for which he advocated its adoption. It would, however, be interesting to know if any one has succeeded in keeping an ordinary greenhouse sufficiently warm to exclude frost by means of an open fireplace within it.

J. ROBSON.

(To be continued.)

SOMETHING MORE ABOUT POTATOES.

I DWELT long over that extraordinary part of the display designated "Garden Roots and Vegetables" at the great International Show of the Royal Horticultural Society in October last, till, from the number of questions put to me, I began to consider myself as a standing dish; though I fear, if a balance could be made, I gained much more information than I was enabled to give—such confidences struck up on the instant, that many mere lookers-on may have imagined in their thoughts, "Hark at those old friends!"

I now send you the result of what I thought to be the cream of the cream of the Potatoes there exhibited—sorts practically unknown to me, though most of the kinds were there that I have already tried and spoken of in these pages, and which on the present occasion it will be superfluous to again touch upon, except in a few instances. But for the varieties that I now bring into notice, perhaps those friends who may be acquainted with their qualities will let us know and correct my judgment in cases where I may be wrong in having fallen over head and ears in love at first sight.

In one instance at least, the *Barbadoes Potato* has been inquired about by "A CONSTANT READER," Dec. 23, page 759: therefore my task will not be wholly in vain, and he will be glad to be informed that his old friend "is still in existence."

Alstone Kidney.—A good-looking, white, fluke-shaped Potato.

Barbadoes, exhibited by Mr. E. Bennett, gardener to G. S. Foljambe, Esq., Worksoep.—A roundish-oblong Potato. Very fine, as large as one's foot.

Bath, by Mr. Bullock.—A very promising-looking "early" Potato.

Jackson's Seedling, from Mr. Robinson, Shaw House, Melbourne, I thought to be a fine pear-shaped Kidney variety. It was also praised to me by a practical-looking man as being an "incomparable early Potato." I recognised it as being what I called the "Lambton" in my "Comparative Merits."

King's New Seedling.—From the Fluke, a second early round. This Potato attracted much attention.

Kirkton Early.—This Potato I mention from hearsay, as an Hon. Col. M.P. recommended it to me strongly in conversation as being an excellent round variety. I cannot take the liberty to mention his name, but he told me he reads this Journal; so I merely take an opportunity to say how sorry I was when a gentleman enticed him away from our Potato palaver, for, as a matter of course, we should have naturally veered towards that part of the Show, and once there, doubtless further valuable information would have been gained from him for these pages.

Lemon Kidney, I observed, was showing its precociousness already by "breaking" on Messrs. Sutton's magnificent stand.

Murton's Seedling, from Rev. T. Stevens, St. Andrew's College, Reading.—A Potato in appearance very like the Fluke, but having a rougher skin. In Mr. Stevens' fine collection I also noticed Daintree's Seedling showing its precocity by "breaking;" and I can very plainly assure you that it requires looking sharp after in this respect when kept in store for eating.

Wellington.—A magenta-stained-crowned roundish-flat-shaped Potato, very taking as to looks, and a monopoliser as to names. I fancy I recognised it under seven or eight aliases—viz., Magenta, Model, Malakoff, Early Beauty, Early Stockton, Early Sydenham, Ward's Seedling, and Painted Lady.

Oxford Red, from Mr. T. Westbrook, Abingdon.—A monstrous pinkish-skinned Potato, all over eyes, in fashion of the Negro, a sort I mentioned in a previous article—both of them calculated to astonish the natives.

Peach-blossom, from Andrew Arcedeckne, Esq., Hall Farm,

Wickham Market, Suffolk.—A sort "grown from seed imported from New York," and it may just possibly crumple-up some of our old sorts.

Queen, by the Rev. Thos. Stevens.—Another seedling from the Fluke, and a promising-looking Potato.

Royal Sovereign, from Mrs. Sweetlove, Mote Road, Maidstone.—A moderate-sized, beautiful-looking, smooth-eyed, white Potato—a perfect model in appearance in my mind as to what a round Potato should be, and as charming as the lady's name who exhibits it.

"*Seedling*," from the Kirke's Ashleaf.—Exhibited by T. Westbrook, Abingdon, "Warranted to be the Earliest Kidney in cultivation."

White-blossomed (Ashleaf?) *Kidney*, from William A. Page, Godalming.—"Grown entirely in rotten tan;" and

Webb's Imperial Kidney.—These two varieties I mention, the latter especially, as being congenial to those who would like to see their Potatoes, as some people do their butter, fashioned a yard long.

I thought many of the kinds of Potatoes most worthy of note in the Foreign department might be recognised as English kinds under foreign names. All of them, moreover, were small in comparison to their relatives over the way.

In the Swedish class I met with "Roda Moss," with which I had a practical acquaintance this season, as the Salmon Kidney. It was also in the English class, where its proprietor caught me by the button and fairly enticed me a hundred yards to view it. Poor man! how enthusiastic he was about it, and he had written its name "sammon kidney!" I confess to have mentioned it rather slightly in my "Comparative Merits," and I really owe it an apology, as well as the Fluke, if I have wronged them by so doing. *Potatis Maccaroni*, as well as some other sorts, were woefully diseased in the Swedish collection; but, strange to say, the Flukes were the only specimens that I observed to be diseased in the English class, and the only sample with that unenviable feature in my own stores is the Fluke.

I will notice two other sorts of Potatoes in the extensive display of "The Hamburg and Altona Gardeners' Society," founded in 1861.

Kartoffeln Pomatyerans Ringam, rather an oblong-shaped Potato; and *Neuwe Kanarische*, a round Potato, in shape and looks exactly like a very good sort I introduced into this neighbourhood some eight years ago, called Martin's Seedling. The Judges set it down that the two Potatoes exhibited were the same variety. I differed from them as a mere looker-on, but I should like to know in the future who was right? I had not an opportunity of learning who purchased those two sorts, but the whole collection was to be sold for the relief of the Lancashire distress. All honour be to their purchasers, and to the gardeners of Hamburg and Altona!

When judgment is wanted, who can we appeal to more impartial than our Editors? Most of us, I daresay, feel an inkling of prejudice in favour of our own productions; and for that very reason, and on account of the importance of the subject as regards the cultivation of the Potato, I would feel obliged by an opinion from head-quarters.

I was quite struck the other day at the difference in both the looks and flavour of the same variety of Potato when grown on the flat and on the ridge—Nos. 1 and 2, for instance, of which I send you samples from both plans; and Nos. 3 and 4, ditto. Please to test them, and allow me to advise you to have both of the same sort cooked at the same time for observation at once. Perhaps you may also think that the ridge-system has a knack of producing them calculated to fill a measure, and weigh down the scales as well as to produce, quality, and flavour.

I should very much like an opinion also, as to what you think of the flavour of the Knight's Monarch Pear, as I have something to say about Pears some day. I have had a long struggle with them to produce flavour; and although those I send I do not consider up to the mark, still, for some years, both the Knight's Monarch and other sorts were very little better in flavour than turnips, and the rector gave me no hopes of encouragement that I ever should produce them here presentable for dessert. I know to within an inch where every root of every tree lies, and I have presented them with three different descriptions of soil in fourteen years, and the rector confessed that we had some very good Hacon's Incomparable, and some first-rate Marie Louise last season; and if I can but produce them with flavour this year, I shall consider my experiments as feats accomplished.

The Blenheim Pippin is a sample from an old tree which would scarcely produce Apples larger than crabs. I added fresh life to its constitution by taking out a trench a yard wide and deep around the circumference of its branches, refilling with rotted turf compost, and I thinned out its head. I scrape off the loose bark, and soot and lime wash its bole and larger branches every spring, and give a thorough good soaking with 600 gallons of house-sewage, just as the fruit begins to swell annually. That is the man—or rather the Apple—as Beau Brummel formerly said of starch.

The specimens of Cox's Orange are from the young pyramidal tree which I mentioned in these pages a short time ago. As regards condition both these Apples are a month after their season, but I wanted you to see the Blenheim Pippin, just to show to you what an old tree can be made to do, and to induce others who may have old Apple trees inclining to wear-out, to go and do likewise. How I should like to have the handling of some of the hoary-headed moss-grown trees in the orchards of Devonshire! What a wiggling I would give them! Oh, that our Devonshire aparian friends would dip their facile pens in a little gall and bitterness, and sting a great many of their countrymen to action upon the spot! So many broad acres, and so many comparatively young orchards that are there giving small returns for want of a little exertion! And then, if some of them were to retaliate on Mr. Woodbury—at least, if they are bachelors—I should rejoice, on account of that poetry, a translation of which he gave us at page 42, from the German.—UPWARDS AND ONWARDS.

[The Knight's Monarch Pears are not large, but of more than average flavour. The Blenheim Pippin as large and as good-flavoured as any we ever saw. The Cox's Orange small, but well flavoured. The Potatoes all bear testimony in favour of the ridge system of growing, not only by their superior size, but excellence of quality.—Eds. J. of H.]

TREATMENT OF APRICOT TREES IN BLOOM.

THERE is a common saying in this part of the country when a person feels he has to contend against sophistry in place of argument, "Now don't throw dust in my eyes." I cannot help feeling my friend Rivers has been dealing in dust. He is quite aware I have insisted on the necessity of a dry atmosphere and dry pollen to the proper fertilisation of the flowers of fruit trees, and I have even thought I was at unnecessary pains to secure this object. He will find if he refers to my article of December 30th, I only threw out a suggestion that the sprinkling of Apricots occasionally before and during blooming might be beneficial.

Now, I would ask, Supposing all the ventilators of your house to be open, and you sprinkled a tree all over the first thing in the morning, or say at breakfast time, how long would the tree remain damp with a dry wind passing through the house? Could it possibly prevent the pollen being dry by eleven or twelve o'clock? I know my success in Apricot culture has been as great as any one can boast of, but it has not been sufficient to satisfy me, and I am anxiously feeling my way to comparative certainty.

Can any one acquainted with the slopes of the Atlas Mountains or the hills of the Caucasus, say if the soil in those localities is dry as dust all winter, or the trees entirely unvisited by rain during the blooming season? If so, then clearly the suggested experiment will result in failure, but if confined to "two trees" it will not be a serious one.

Let me give my reasons for trying the experiment I suggested, for, remember, it is only an experiment at present.

Some years ago I noticed three large Apricot trees full of bloom in my farmyard. It rained with a strong west wind almost every day; and the trees, being trained to a western aspect, were, of course, exposed to the full force of the showers. When it was not raining the sun often shone brightly, and I remarked several times how strong and healthy the blossoms were. One day the weather turned much colder; the trees were covered with snow, and as there was a slight frost, I thought it all over with the Apricots; but they never set so thickly on those trees before or since.

On talking over the matter with a clever old gardener, still alive, he said he had often remarked Apricots set best in changeable weather. I have observed the bloom of trees which had been kept dry all winter had a dull and weak appearance, and have an idea that such extreme dryness is unnatural; but, of

course, this idea may prove incorrect, and if I prove it to be so you shall soon hear the result.

I think the tree in a pot mentioned by Mr. Rivers as standing in a narrow house with a Beech hedge at the back 8 feet high, and another in front 4 feet high, proves very satisfactorily that Apricot blossoms will stand a certain amount of frost, but not, I think, that they require to be always dry. Such a very imperfect protection would hardly insure the latter; nor do I think he is quite justified in saying, if he had lighted a charcoal fire in his orchard-house, almost every blossom would have set. Had he tried the experiment, and such had been the result, it would have been worth knowing. I am sorry I have no more positive information to convey on this interesting subject, but trust this gentle sprinkle will "lay the dust."—J. R. PEARSON, *Chilwell*.

THE PEAR CROP OF 1862.

As you ask for information respecting the Pear crop of 1862, I beg to offer you the following observations. There was an abundance of very strong bloom, and the fruit set very thickly; but the cold and wet in June and July thinned it considerably. The Pears did not appear to grow till August and September; indeed, I never saw the Pears and Apples grow so fast as they did in the latter part of August and all September. The soil, a very retentive loam, is very cold and damp, and the situation is low and damp.

The Pears are all grown against an east wall, except the Easter Beurré, and that is on a west wall.—E. SENDALL, *Burningham, near Cromer, Norfolk*.

Williams' Bon Chrétien.—Crop very heavy. Fruit medium size, and very good. Ripe middle of September.

Louise Bonne of Jersey.—A good crop; delicious fruit. Ripe beginning of October.

Forelle.—Crop good, but all the fruit that hung exposed were mildewed; the others were fine and delicious. Ripe end of October.

Marie Louise.—Very heavy crop. Fruit small but delicious. Ripe end of October.

Fondante d'Automne.—Crop middling. Fruit fine and very good. Ripe beginning of October.

Passe Colmar.—Crop good. Fruit small, and the best I have seen for ten years. They always mildew more or less. Ripe end of November.

Winter Nelis.—A heavy crop. Fruit medium size, and delicious. Ripe very early, and all done by the second week in December.

Beurré Diel.—A heavy crop. Fruit rather small, but very good. Ripe middle of December.

Glou Morceau.—A good crop. Fruit small, and very much mildewed; kept badly. Ripe in January.

Beurré d'Arenberg.—Crop good. Fruit delicious, medium size. Ripe throughout December.

Easter Beurré.—Crop good. Fruit very fine and beautiful. Ripe in December and January.

Beurré Bosc.—Fruit medium size. Ripe beginning of November. Not first-rate.

Ne Plus Meuris.—A very heavy crop. Fruit rather small, but very good. Ripe now.

NEW PEARS, THEIR VARYING MERIT ON DIFFERENT SOILS.

AT page 76 of THE JOURNAL OF HORTICULTURE, the well-known pomologist, "T. R.," gives us some account of Huyse's Victoria Pear, and says he tasted it on the 15th of January, comparing it with Joséphine de Malines; and from the comparison he pronounces it one of our best sorts. It is curious that the day before I read his notice I went purposely to taste the Victoria grown by a gentleman near here. We took Winter Nelis as our standard; but although the Victoria had the fine flesh, abundant juice, and melting qualities of one of its parents—Marie Louise, yet it was entirely wanting in the acidulous piquant flavour that so much distinguishes the Marie Louise, and it had not the slightest chance against the Winter Nelis. You see "T. R." and myself have chosen two Pears as our standards of excellence not easily surpassed; and it is not much to be wondered at that the Victoria did not rival the Winter Nelis; but how it reached the superlative Joséphine in one

locality, and yet in another place should be little beyond second-rate in flavour is worthy of inquiry, as it will in some measure account for the very different descriptions we meet with of the same Pear by writers on pomology.

As the fruit-room where I tasted the Victoria had not the light excluded, it would in a measure account for the flavourless state of the fruit (which were all ripe January 30th). Yet, locality, soil, and season have such wonderful influence on the flavour and keeping properties of Pears, that I think it well to state the fact of the Victoria being flavourless here this season, that purchasers of fruit may understand that it is quite out of the power of nurserymen to prevent Pears sometimes turning out the very reverse of what they describe them.

After tasting the Victoria, we tasted the Bergamotte Esperen, which we also found watery and with little flavour. Now, in nine places out of ten this, I think, would not happen with this sort, as I find it one of the best and most constant in its fine qualities, and one that bears profusely. No garden should be without so valuable a sort, more especially as it bears well as a pyramid, and is one of the best on a quince I know of. However, I find that all the fine-fleshed late Pears will be melting, juicy, and sweet upon light, warm soils, but will generally want that high, rich, buttery, and honied flavour which distinguishes some of them upon heavier soils inclining to clay.

The converse sometimes holds good with the coarser-fleshed kinds—a light warm soil very often brings out all their best qualities. A striking example of this I had here this season in Rousse Lench, which surpassed all my other sorts in luscious, honied sweetness, and rich, melting, buttery flavour. I should say that this sort is invaluable for light warm soils, being a profuse bearer and keeping until now (February). It is the latest hanger on the tree of any sort with which I am acquainted. Even when the leaves have all fallen, one will find the fruit still adhering firmly to the tree—a valuable quality in exposed places, as it is not easily blown off; and for walls I think it one of the best sorts known. Of course, such a late Pear would not do for the north of London, and, perhaps, not beyond Wilts, Hants, Beds, and Bucks.

"T. R." says he thinks that the Victoria will supersede the Glou Morceau and Beurré Diel. I think with him as to the first; but the second will not be easily dethroned in some localities on strong soils, although on light soils it will not be able to hold place with the Victoria. I do not know any Pear that varies so much with soil as does the Beurré Diel, nor any Pear that has such a range of the ripening period. With me this season it has extended from November to now (February); some fruit having fallen from the trees ripe, whilst others are now in my fruit-room and have no appearance of ripening, and possibly will rot and be worthless. On a pear soil about six miles from here it is one of the most magnificent Pears one would wish to possess, and although I had my grafts of the trees that bear these most splendid fruit—in all senses splendid—yet mine are not worth gathering.

Is "T. R." right, or is it the P. D. has made the mistake in saying that "the flavour of the Victoria is like the Prince of Wales Pear?" Should it not be Princess? (a little prematurely perhaps). I think the last was the name given by Mr. Huyshe to his third seedling. Quite a stroke of luck to obtain three such Pears from the same cross, and it shows how much may be done by judicious selection of parents.

To-day I have again tasted Easter Bergamot, and find in two specimens taken from the cold fruit-room that they are rich, crisp, and juicy; whilst a third taken from a warm cupboard is rich and nearly melting. The specimen described by me, page 29, was from a warm place, which generally much improves all late Pears. In cold or clay soils this sort would, undoubtedly, be as "T. R." says, "worthless."

As to Doyenné Goubault, the fruit from my specimen tree corresponds exactly with the description in the "Fruit Manual." I received my tree from Angers, where the sort was raised by Goubault, and the description given with it was, "First quality; medium size. Flesh rich, buttery, and melting. Ripe in October and December. Tree an abundant bearer."

And now to finish my long dissertation, allow me to recommend to the notice of your readers a new Pear, called Vauquelin, a very large and beautiful sort, with a fine, delicious, melting, and perfumed flesh, which is also rich and buttery, and just now ripe (February 2nd). I have as yet only had two specimens, but from their superlative qualities I think the sort will prove one of our best kinds.—J. SCOTT, Merriott, Somerset.

"THE FLORIST AND POMOLOGIST."

At the beginning of last year the pictorial journal so long known under the name of "The Florist" assumed a new title, and became "The Florist and Pomologist." The increasing taste throughout the country for the study and cultivation of fruits called for some more prominent recognition of this subject in a pictorial form than had previously been made; and in the new publication the same importance was given to fruits and fruit-culture, as to floriculture.

The volume of "The Florist and Pomologist" for the past year is now before us in its beautiful blue and gold binding, and whether viewed externally or internally, we cannot but congratulate the editors on having produced a very handsome and very useful book. The plates, of which there are twenty-three, are quite masterpieces of art, and convey the most faithful representations of flowers and fruits from the pencil of Mr. Fitch. As was to have been expected from the management under which the new periodical was placed, the success of the undertaking was complete from the commencement. We find in the pages of this volume thoroughly excellent papers on practical gardening by some of the most celebrated gardeners of the present day, and on all these grounds with great pleasure we recommend this excellent work to the notice of our readers. It is, indeed, a marvel of cheapness, with its two beautifully coloured plates, and sixteen pages of good practical gardening.

COTTON-SEED CAKE AS A MANURE.

ALLOW me to ask if any of my co-subscribers have tried cotton-seed cake as a manure? and if so, will they give the result of such trial?

My gardener assures me that it is valuable; that from a line of Potatoes on which he put 14 lbs. of cotton-cake, he obtained 68 lbs. of Potatoes, while farmyard manure produced only 33 lbs, the length of row being the same in both instances, and only 3 feet apart. I was induced to have it tried through reading a short paragraph in Mr. Johnson's work on agricultural chemistry. Naming the matter to a friend, he drew my attention to Mr. Alderman Mechi's work, "How to Farm Profitably." This gentleman speaks well of it and annexes a table drawn out by Mr. Lawes, who estimates the value of manure from animals fed on cotton-seed cake, at 20 per cent. higher than that from rape or linseed-cake.—A CONSTANT SUBSCRIBER, *Wilmslow, Cheshire.*

WATER-BAROMETER.

PERFECTION is not claimed. No weather-glass is faultless. But, it is believed, that the indications of this instrument are more truthful than those given by barometers in general use. Its cost is within the means of working-people. This consideration has induced one who has made experiments on what is an old principle, to make public the results of his experience.

The water-barometer consists of two transparent vessels—a flask and a hyacinth-glass. The flask is 10 inches high—5 in the bulb and 5 in the neck. The neck is, through its entire length, of half-inch diameter; the bulb being at its greatest breadth 3 inches through. The hyacinth-glass should be 7 inches and a quarter in height, and of such width as will insure stability. In the bottom of this lower glass there should be water, coloured by some dye, forming no sediment. The neck of the flask should be divided into 40 equal parts of one-eighth of an inch each on its outside, with figures 5, 10, and so on up to 40, 20 answering to "change." This scale may be made with any dark paint or varnish, by a small camel's-hair pencil. As soon as dry, the flask must be put upside down into the lower glass, so as to be suspended on the rim with its end submerged half-an-inch only in the coloured water. The instrument is then complete. The water will rise up the neck of the flask for fine, and sink for bad, weather.

This barometer should be placed in some room where neither sunshine, fire, gas, nor frost comes. It is but slightly sensitive to natural, but very much affected by artificial heat or cold. It will always move with the quicksilver, but will often alter for a coming change when the common weather-glass is obstinate.

In giving notice of a storm, this water-barometer acts very correctly. Fog does not affect it. North and east winds have in degree, but not in extent, the same influence on this as they have upon the mercury glass—they elevate the column. Rain

may also fall from high clouds, or from suddenly condensed mist, without much depressing the fluid. The existence of contrary currents of wind will often interfere with the working of all barometers. But, with such exceptions, this water-barometer may be depended on, as may be seen from a register of its movements carefully kept during the last thirty-two days. In this table the state of the mercurial barometer, the wind and the temperature, are given in order that a fair estimate may be made of the relative worth of the water weather-glass.

It should be added, that precision in the manufacture of the glasses is very important. A rough but imperfect substitute for the upper glass is a common Florentine oil-flask carefully cleaned out with soda. This was found out long ago. A more sensitive glass may be made, and of larger range, by contracting the diameter and increasing the length of the flask's neck, and then the lower glass must be higher in proportion.

The flask should be handled as little as possible, as the warmth of the hand depresses the column.—F. COPLAND, *Chelmsford*.

REGISTER.

Date.	Common Barometer.	Thermometer.	Wind.	Water Barometer.	Weather within twelve hours.	Remarks.
1862.						
Morn.						
Dec. 12	30.30	45	W.	26	Fine....	Bright day
13	30.10	45	W.	5	Rain....	Wet day
14	30.30	30	S.W.	27	Fine....	Bright
15	30.35	35	S.W.	25	Fine....	Light cloud
16	30.40	38	S.W.	25	Fine....	A dull day
17	30.48	48	S.	15	Rain....	Four hours light rain
18	30.35	36	W.	24	Rain....	Light rain—High cloud
Evening	30.00	50	S.W.	0	Storm..	In the evening a very heavy gale set in and continued till the morning of the 22nd, when the weather moderated
Morn. 19.	29.65	46	W.	2	Storm..	
20	29.45	38	W.	5	Storm..	
21	29.55	38	N.W.	24	Finer..	Very squally
22	30.10	32	N.	35	Fine....	Quiet—Small shower at night
23	30.10	38	W.	34	Fine....	Foggy
24	30.20	40	S.W.	34	Fine....	Cloudy and dull
25	30.30	43	W.	32	Fine....	Bright
26	30.30	44	S.W.	35	Fair....	Dull
27	30.40	44	S.W.	28	Fair....	Dull—Misty
28	30.29	49	S.W.	17	Fair....	Cloudy—Thick
29	29.67	46	S.	5	Rain....	Gale all day
30	29.60	44	S.W.	5	Rain....	Fine at night—Little rain
31	30.00	35	W.	24	Fine....	Bright day
1863. Jan. 1	29.05	50	S.W.	21	Fine....	Cloudy and damp
2	29.50	50	S.W.	5	Rain....	Gale of wind
3	29.50	38	S.W.	16	Fine....	Sunny
4	29.40	44	S.W.	11	Fine....	Cloudy
5	29.5	44	S.	5	Rain....	Heavy and wind
6	28.90	40	S.	10	Rain....	Showery
7	29.00	40	S.W.	15	Fair....	Damp
8	29.20	40	S.E.	25	Fine....	Bright
9	29.55	36	S.E.	29	Fine....	Damp
10	29.65	38	E.	30	Fine....	Cloudy, but dry
11	29.65	38	N.	29	Fine....	Scotch mist
12	30.10	27	S.	35	Fine....	Rain at night

FIELD MICE.

YOUR correspondent, W. Hill, wishes to know how to destroy these troublesome little animals that are barking his Hollies. I beg to offer him the following suggestions to trap the mice:—Bore a number of holes all over the plantations about 20 inches deep, and wider at the bottom than at the top; these if baited and properly tended will catch great numbers. By all means preserve the barn owls and kestrel hawks, as they live on mice, and are in no way injurious to game.—B. P. BRENT.

CELERY CULTURE.

I NEVER missed having a crop of Celery yet, and my plan of cultivation is very nearly that of Mr. Hague's, though instead of plying the well-rotted leaves and refuse—the remains of a "muck-pie" hotbed over the roots, I place it under them in the trench, and I do not allow the plants to become thirsty for lack of house-sewage.

I bring the plants up hardy from the first. The mischief, I think, lies in too much coddling in the first going-off. Never let them know what bottom heat is, unless a few curiosities are wanted for the first shooting parties; and thin and prick out in time. Plant out with good balls of earth attached, and injure

the foliage as little as possible. I mentioned some years ago in these pages, that I save the Asparagus haulm to shade them on those occasions.

I am never in haste to mould-up Celery, but allow it to take a good growth, and then with a length of tar cord, and giving it a twist around each plant from end to end of the trench, they are placed bolt upright like a rank of soldiers, and the soil can be expeditiously moulded to them without danger of its penetrating to their hearts, which must be guarded against, and it is of very little use applying more liquid to them afterwards.

The sort I send is Coles' Red. It has never had but one moulding, for what with the International Exhibition, writing about that and other matters, the frost coming, and one thing and the other, moulding was afterwards neglected. Nevertheless, I have not had one rotten or bolted stick.

Our Aytoun Castle Leeks are very good; both the former and latter we use continually as stewed vegetables, and very wholesome and pleasant provisions they are either with brown gravy or white sauce. I cultivate the Leeks in trenches, constantly plying them with plenty of sewage, and mould them accordingly as they grow.—UPWARDS AND ONWARDS.

PLANTS OVER HOT-WATER PIPES.

CAN you inform me whether plants growing in long wooden boxes or troughs would be injured if placed immediately over the hot-water pipes which are carried round the inside of the conservatory? The boxes would be raised about one foot from the floor.—A.

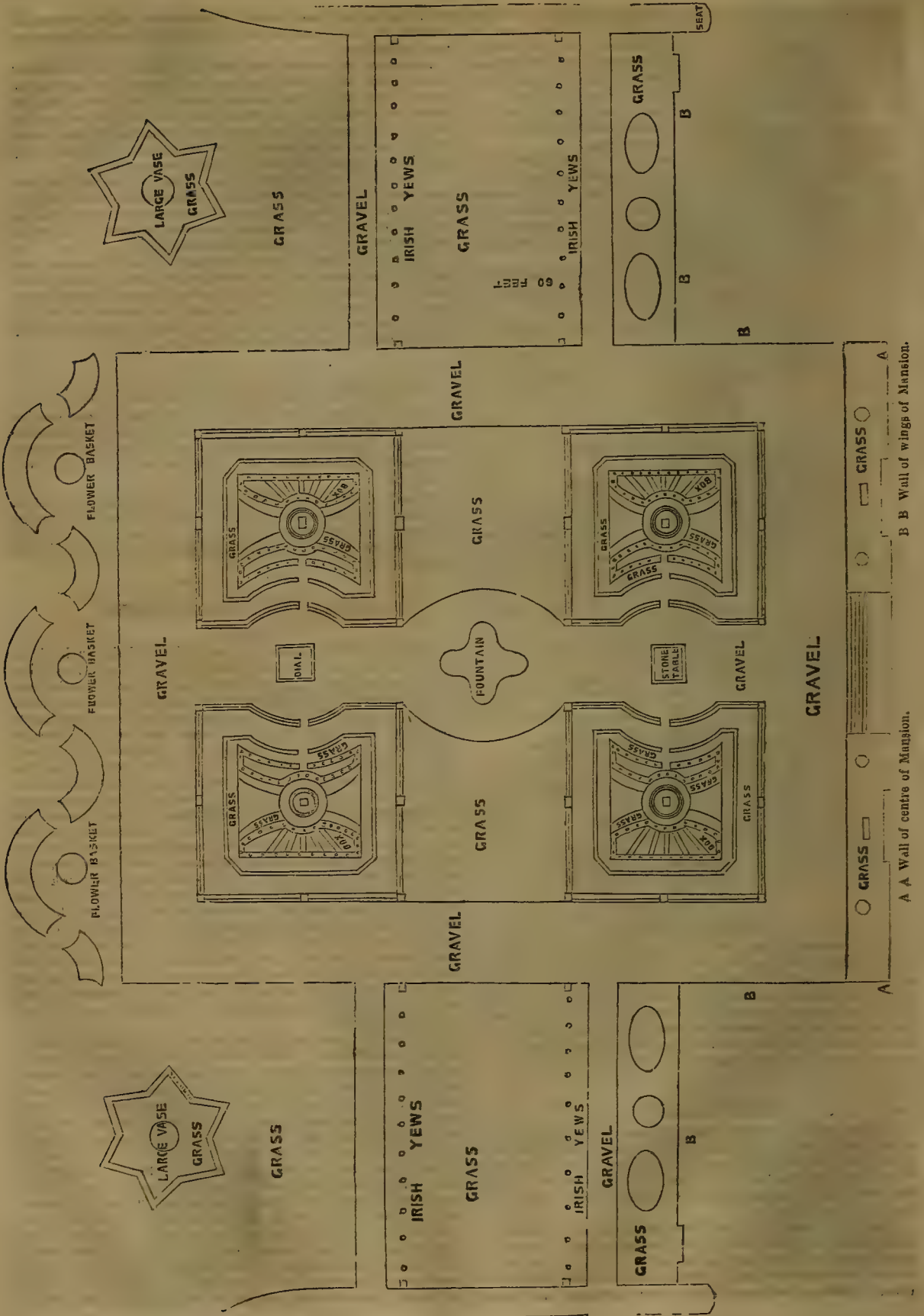
[It will be safest to put the boxes at the distance of a brick in thickness from the pipes, which will alike prevent over-heating the boxes, and allow free radiation of the heat from the pipes. Of course, blocks of wood would do as well, or even better than a loose brick.]

A FEW DAYS IN IRELAND.

CARTON.

THIS magnificent residence of the Duke of Leinster is about sixteen miles from Dublin and two miles and a half from Maynooth, so celebrated for its training college for the Catholic priesthood, and so interesting to the antiquary from its ancient castle, the ruins of which are so densely clothed with Ireland's evergreen—the Ivy. The splendid classic mansion of the premier peer and only duke of Ireland, was designed by Richard Cassels, and will long remain a monument, not only of the purity of his taste, but of the ideas that must have been entertained by him of fitness, utility, and comfort. In passing many a noble structure, the idea of magnificence is often lowered by reflecting that within the walls so many human beings pass the most of their working hours beneath the ground level, in comparative darkness, and where scarcely one direct beam of sunshine can ever penetrate. People will begin to think now that the circumstances and conditions that may be the very best for keeping wine and ale, may not be the most suitable for securing the health and promoting the cheerful activity of the industrious workman. It did seem to be in unison with the benevolence of the noble peer, standing as he ever does in the van as respects all means of improvement, to see at a glance that from the uses to which the wings of the mansion were chiefly applied, his servants could have access to sun and air equally with himself.

The building consists of a centre and two projecting wings on the garden front. With the exception of a beautiful portico in the centre of the entrance front, and one bold break besides on each side, the mansion extends in a straight line for some 400 feet. On the garden front the length of the centre of the house is 220 feet, mean breadth 56 feet, width of wing on each side of this centre 68 feet, length of each wing on each side 85 feet, continued to alcove 35 feet, making 120 feet for length of each wing, and length of garden front 460 feet, breadth of each wing across courts and main buildings 124 feet. In the centre of the garden front is a noble portico, 30 feet by 18, with a flight of some six steps also 30 feet in length. This opens on the left side into the library 46 feet by 19½, and farther still to the left are the reading-room and the Duke's private room. On the right-hand side are the drawing-room, 35½ feet by 19½, a good-sized ante-room, and a very fine dining-room, 52½ feet in length, 24 in breadth, and 24 in height. The left wing is



chiefly applied to the rooms necessary for attending to very superior stabling. The right wing is chiefly devoted to rooms for the house-steward, housekeeper, kitchens, &c. Each of these wings has a suitable entrance at its end. These two wings are connected with the centre by a colonnade or conservatory on each side, each 43 feet by 10.

If flower-gardening were to be attempted at all in front of such a magnificent building, it seemed to be required that its characteristics should be simplicity, uniqueness, and elegance. So far as we could judge from our short visit, these have been thoroughly secured, and by a mode not more simple than uncommon. Leaving lesser matters out of consideration there are two grand features. First, four square or parallelogram gardens bounded by low Yew hedges, in front of the centre of the mansion. The first pair is next the portico. The second pair is separated from the first by a breadth of grass of 60 feet. This grass is extended, but wider, 300 feet on each side, making with the centre of 220 feet, 820 feet in all. This forms the Irish Yew avenue—the second grand feature—the trees standing 60 feet apart across the avenue, and, therefore, on one side in a direct line with the farther boundary of the first pair of gardens, and on the other side in line with the nearer boundary of the second pair of gardens.

Through Mr. James's kindness we would have given a large plan of these unique gardens, but have been obliged to give a very condensed one to suit our page. With that plan, however, and even without it, our youngest reader may easily make the main outlines for himself by the following simple details. Take a straight line across in front of the steps of the portico, which will leave about 17 feet between it and the mansion for grass lawn, and three clumps for flowers on each side. Then from this line take another close to the wing, on each side and beyond it, measuring altogether 262 feet. Cross that at the farther end, and you have a parallelogram 262 feet by 220. Come back again to the line of the portico, and measure from that line of grass 28 feet for gravel. Take the same width along each side, and across the farther end, and thus you have another parallelogram less by 28 feet at each end and the sides than the first one. Divide this longitudinally again, just opposite the portico, by another walk of 28 feet, and you have now two equal-sized parallelograms bounded by gravel all round. Lay-off in the centre of this piece of ground longitudinally, which we have seen at first was 262 feet, a space of 60 feet transversely for grass, unless where the three walks pass through it, and then you will see that that grass avenue and the different walks will leave two parallelograms next the mansion, and two beyond the grass avenue, each of which will be 68 feet in breadth and 73 feet in length. As already stated, the Yews in the avenue are 60 feet apart transversely, the same width of 60 feet extending for 300 feet on each side.

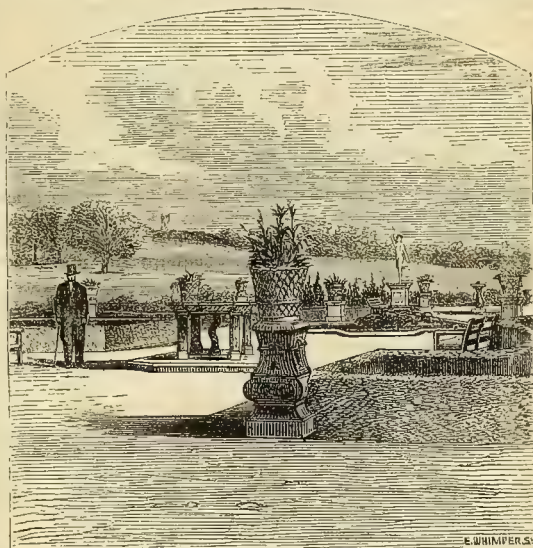
As described, each of these parallelograms would have straight sides but for good reasons. One of the four sides of each of these gardens is curved in the middle where the entrance to each is, which is about 5 feet in width. These entrances are from the middle walk, and those of each pair opposite each other. Even at the middle walk the straight square form is maintained at each end for 16 feet, and is then curved towards the centre opening, so that the width of gravel there, from one square to its opposite neighbour, is 36 feet instead of 28 feet. In the centre of this wide space next the mansion is placed a massive stone table, and in the similar space farthest from the house there is a sundial; and the propriety of the arrangement we shall presently see. We may just state here that in the centre of the same central walk, with the 60 feet of grass on each side, is an elegant fountain with lofty statuary, and here the grass is swept out on each side so as to give, across the fountain and gravel, a width of 50 feet.

The external arrangements of these four parallelogram gardens are the same. It will have been seen that one side of each of the four will abut on the central avenue of grass of 60 feet wide, the other three sides will come against these twenty-eight-foot walks of gravel. To prevent this there is a verge on these three sides of about a foot of grass. The outside of each garden is then bounded with a beautiful Yew hedge 20 inches in height and 18 inches across. A grass lawn 8 feet in width separates this hedge from a second hedge of the same size and equally well kept, and then a grass walk of about 4 feet separates the second hedge from the centre, devoted to flowers.

In the centre of each of these gardens is an architectural pedestal 2 feet square, and 3 feet in height, and surmounted by

suitable statuary, also 3 feet in height. At each of the four outside corners of these gardens, and in the centre of the three sides—that is, on all sides, except where the entrance is situated, is a pedestal 2 feet square, and 40 inches in height; the pedestal being partly in and partly outside the Yew hedge, so as to show clearly. On these pedestals are beautiful vessels in the basket style, which when we saw them, in September, were filled with Scarlet Geraniums and other plants, and in winter are chiefly filled with Box trees about 18 inches in height. Whether for summer or winter decoration the plants are placed in small suitable tubs, and these are slipped inside of the baskets, and now we see there was more designed than mere variety of outline, in the widening of the central walk opposite the entrances to these gardens. To balance each garden and render it uniform, there should have been eight baskets instead of seven. The eighth could not be placed on the inner side, on account of the entrance-opening; but the table in the centre of one pair of gardens, and the dial in the other, come in very nicely as a compromise to the claims of balancing and uniformity.

These central statues, with the lofty one at the fountain, the dial, table, and twenty-eight baskets, gave a very striking, rich



appearance to the whole scene, increased as that was by the uniqueness and the dark colour of the Yew boundaries. As far as we recollect, each garden was arranged differently. The pedestal in the centre of each was free, as it ought to be, and surrounded with a ring either of grass or gravel, and narrow walks of one or the other up to it. Some of the gardens were balanced in either direction. In others, as the one engraved, this had been disregarded, and the picture was to be looked at as a whole, instead of in quarters or parts. Whatever the ground plan, the carrying-out of the arrangements reflected the highest credit on the skill, culture, and taste of our new friend, Mr. James. It would be endless to describe the planting of the larger and smaller beds, especially without plans; but three features seemed to be prominent: First, the contrasting of the larger beds with bright colours; secondly, the mixing of such Geraniums as Lady Plymouth and the old Scarlet Variegated with *Verbena venosa*, or the Flower of the Day with Purple King, which were done to perfection; and thirdly, the surrounding the outsides of the group with dotted pearls—such as having *Verbenas* Purple King, Pulchella, Manetti, &c., for ground colour, and spots regularly dotted with Alma, Flower of the Day, &c.; or the ground colour would be white, as these Geraniums or Variegated Alyssum, and the spots purple or scarlet.

Before noticing the avenue, we may mention that in front of each wing of the house lengthwise is a piece of lawn similar to that in front of the main centre, then a walk some 8 feet, and lawn beyond, going on to the 60 feet between the trees. This Yew avenue is a grand feature, extending 300 feet on each side of these central gardens, and the baskets in the Yew hedges coming in a line with these specimen Irish Yews, making the avenue altogether 820 feet, and backed by a border of Hollyhocks

and Dahlias, and then a row of Cedars, 40 feet apart. The Yews in this avenue are 10 feet from plant to plant, and average from 10 to 12 feet in height, each plant being a straight, well-rounded, massive, healthy specimen, which carries much cultural care and constant attention in its appearance.

The grandeur of this avenue is, if anything, heightened by the ground on the right-hand side of the mansion rising somewhat abruptly by a large mound having been made there, which conceals a drive leading to the mansion and offices. Besides the fountain and the statuary already referred to in the middle walk of the Yew gardens, and which is thus in the centre of this avenue, colossal figures in bronze either are or will be placed near each end of the avenue. Besides shrubs at the mound at the side farthest from the Yews, there was a ribbon-border in front of the shrubs, beginning with Hollyhocks and Dahlias, a row of Crystal Palace Dahlia, then China Roses, then Kentish Hero Calceolaria, followed by Scarlet Geranium, then Verbena venosa, and fronted with Manglesii Geranium. Here the row of venosa was very nice, and told well, and the Kentish Hero, an old favourite, was the best we have seen for years. After having had it in grand perfection, it became so liable to the black spot with us, that we were forced reluctantly to give it up.

The whole of the extensive lawn on this avenue, and far beyond it, was in excellent keeping, looking as if it were rolled every day. The wide walks were clean and firm, and the flower-beds, notwithstanding the rains, were in fine order, testifying to a very high style of management; and whatever may have been the case at other times, not a workman was to be seen during the forenoon of our visit. This last fact is often of more importance than is generally imagined, as far as respects the pleasure of the proprietor and his visitors, and the comfort of the gardener. Much may be done by having work near mansions finished before breakfast, so that all may be cleared-up before visitors walk out. At the farthest end of these Yew gardens is a small parterre of baskets and clumps on grass, next the park, and in some of these were tall Hollyhocks, which were all that we would have wished altered under the present arrangements. They did look staring and solitary against the sky outline, or the distant background of groups in the park, and so different from what they appeared in other places, with a green background behind them.

The arrangements of these Yew gardens, besides their uncommonness, seemed to secure three advantages: First, little of the flowers in the beds could be seen unless from the higher windows until you came pretty close up to the beds, and this will always enhance interest and pleasure; second, the double low wide hedges, and the amount of grass, and the plants in the basket would give a finished appearance in winter, even if the beds inside were unplanted; and in this respect there would be an advantage over sunk panels in such a place unless these were carefully planted in winter; and third, no flowers, except those in the raised baskets, coming in prominently before the eye, there would be little but these to divert attention from the park scenery beyond when it was desirable to concentrate attention upon it.

That scenery is very pleasing and attractive, the park being very large, the trees beautifully grouped, and the woodlands massive and well managed. Though the surface when examined is undulated and varied, yet for a great extent of country the prevailing features from a distance are levelness, richness, luxuriance, and abundance, with but little of the bold romantic picturesque which abounds in many parts of Ireland. Amid scenery so beautiful, but somewhat level in its beauty, the mind seems to long for some elevated points on which the eye could repose; and just as if to meet such a craving desire, there is a high tower at one place, and a lofty pillar at another, which, for many miles, form well-defined landmarks. R. FISH.

(To be continued.)

ERRATA.—Page 73, first col., fourteenth line from bottom, "colour" should be "column." Page 75, second col., thirteenth line from end of paragraph, "bad cutting" should be "bad cutting." Page 97, first col., third line from bottom, "κ" should be "κ." Page 98, first col., sixth line of second paragraph, "glass" should be "grass." Page 99, first col., twenty-first line from top, "track" should be "trench."

GRANT THORBURN.

WE regret to announce the death of Grant Thorburn, of New York, at the advanced age of 90. Mr. Thorburn was the founder of the extensive seed establishment now known as

J. M. Thorburn & Co. He left Scotland in the year 1794, and after a successful career of honourable industry, and a life devoted to the welfare of his fellow citizens, with whom he was held in high estimation, he retired from public life some years ago. In our next we shall give a sketch of this extraordinary man.

SOWING POLYANTHUS SEED.

BEING an ardent lover and successful grower for more than forty years, of that early spring flower, the Polyanthus, I thought a word or two on its cultivation at this season of the year might be acceptable to many amateurs who have been unfortunate in its culture, having heard many persons say, "I admire the flower, but cannot get the seed to grow. I have taken great pains with it, placed the pans in a greenhouse, and waited a month or five weeks, and yet no plants have made their appearance, and then have thrown them on the dung-heap." Now, if they had waited a few days longer they would have been rewarded for their trouble, as the seedlings seldom make their appearance under six weeks.

Others have set their boxes in the sun, where in two or three hours, if the seeds had begun to germinate, their labour is all lost, for once dried in that state they never recover; but if the amateur will attend to the directions I am about to give, he will find a one-shilling packet of seed will give him two hundred plants, and from that quantity he may calculate to get from twelve to twenty first and second-rate flowers that will not disgrace a florist's stage, and the remainder be good border flowers.

I generally sow my first seed early in February, in the front of a cold pit, where little or no sun comes on them. These produce, generally, my best and strongest plants. In March, or earlier, I make my next sowing in the open air, in a shady border, making the soil as fine as I possibly can with a rake, and sow my seed, taking great care to put no more fine mould on the seed than will cover the face of writing paper, and put on a few small bushes or brakes to keep the wind from drying the earth, and ease the water given from the pot, as in no instance must the seed be allowed to get dry. Thousands of plants are lost for want of that precaution. When large enough to handle, plant the seedlings 3 inches apart in a shady border.—JAMES WOODS, Harwich.

VENTILATION.

I NOTICE in your paper of the 20th ult., a letter from your well-informed correspondent, "D., Deal," in which inquiry is made as to ventilation in a hothouse he purposes building, without having sashes on the roof to open.

I have just completed two vineries with a like object in view; describing one will answer pretty nearly for both.

The house faces a little to the east of south. It is 75 feet long, 16 feet wide within, the front from 7 to 8 feet high, and the back wall from 12 to 13 feet high. The roof and front are glazed with large-sized squares in iron bars on rafters. It is well drained, and has a flooring of concrete covered with 20 or 24 inches of soil, &c., for the Vines to be planted in. The bed of soil extends from the back wall to 20 feet in the front, and small arches under the front wall allow the Vine roots to spread in all directions. The house is heated by 10-inch drain-pipes serving as flues; the first 12 feet from the fire, being walled with firebricks. The house is divided by a glass partition into two unequal parts—that nearest the fireplace intended for Vines, and the smaller, 30 feet long, for an orchard-house; a flue continued through the latter can be used or not as required. A pit, with an eight-inch flue passing under it, laid in broken bricks, &c., used for a Melon or Cucumber-bed, fills up much of the centre of the vinery. The brick wall in front shows about 4 to 6 inches above the soil. On this wall I have wooden ventilators of 8 inches depth, the whole length of the house. There is no opening whatever in the roof; but immediately under the top part of the roof is a row of ventilators opening into the wall and out again in front under the projecting flaps on the top of the wall.

Generally in hothouses manure is laid on the borders, but this cannot be forked in more than from 3 to 4 inches deep, lest the roots be injured. I was desirous of supplying mine much deeper, and had round drain-tiles made 20 to 24 inches long, and 4 inches in diameter, perforated with three rows of holes

running parallel and on one side only. These I have placed with the holes downwards, lest they might become filled with earth. The drains are laid in rows 4 feet apart, from the back wall to the extremity of the border in front, each drain thus being from 36 to 40 feet long. Each junction of the 20-inch pipes is supported by a brick 12 inches long, placed on its end, not to occupy too much room in the border. These rows of drain-pipes have openings to the surface by junction tile-pipes placed perpendicularly at the extremities, and at one or two places in the middle.

I had two objects in view in constructing these drain-tiles, or, rather, I should call them supply-tiles. I can supply the roots of my Vines with any quantity of liquid manure, and can also admit or, stopping the drain ends, exclude the outward air.

If "D., Deal's" only object is additional supply of air, I would recommend drain-pipes of 10 inches in diameter, as the air will circulate in greater quantities and more freely than in smaller pipes. As his hothouse has glass only at one end, a good-sized triangular window at its upper corner would cause much air to circulate from the openings at the bottom ventilators and drain-tiles. I have these windows in both ends of mine.—EDWARD SWAINE, *Crescent, York.*

[The arrangement of the flues we must approve of, as they are just what has been so often recommended in these pages. Your mode of ventilating at top is much the same as that described by Mr. Fish as existing at Rockfield, near Kells; whether it will be sufficient or not will depend on the size of the ventilators. Even with the windows at the end, a foot opening would be necessary, unless a large amount of air is admitted through the drain-tiles that pass beneath the border. This plan was also adopted at Rockfield. Though we approve of this mode of ventilating at top, chiefly because the air is much mollified before entering the house, we cannot recommend it on the score of economy, as a simple hinged ventilator at the apex would be much cheaper than these openings in the back wall, coming out beneath a top coping. You would also find that the mode of taking air through the border was practised at the gardens of the Vice-Secretary, Phoenix Park, Dublin. On the whole we generally approve of your arrangements; with enough of top air you will be all right.]

HORSE CHESTNUT.

I AM induced to write this letter from the observations made in your last week's Journal relative to the name of the Horse Chestnut.

The prefix "Horse" is not, I think, as Gerarde imagines, because horses may have been fed or physicked on the nut, or to denote its powerful flavour; but from the simple fact that at every joint in the branches is an exact resemblance of a horse's foot, and not only the foot but the fetlock-joint, the pastern, hoof, shoe, and even the nails.

All persons whose attention I may have called to this fact have expressed themselves equally surprised at the correct likeness to the horse's leg and foot, and that it should not be more generally known.

I have enclosed one that is lying at hand, and although it has been cut off some time and is not a good specimen, yet it will show you at once what I mean.—B. B.

[This illustration is a very good one, and we have others in our possession with a very close portrayal of the knee and fetlock-joints, pastern, hoof with nails of the shoe, and frog; but we do not think such resemblance originated the name. We believe, as we said last week, that the term "Horse" was prefixed by our ancestors to anything that was a coarse resemblance of something else, as "Horse-radish," "Horse-laugh," "Horse-cucumber," "Horse-mint," "Horse-play," &c.—EDS.]

IMITATION OF GRANITE.

HAVING read an account of the result produced at Woodstock by mixing granite with Portland cement, I should be obliged by your informing me how it was used, and what gives the appearance of stone to such buildings in London as the Great Western Hotel, which is, I believe, only Portland cement. Is it a wash of sand applied to the last coat?—A SUBSCRIBER.

[The result obtained is very different from any mere covering with cement, and then drawing the surface into the resemblance

of blocks of stone. This, of course, is done by Mr. McDonald, but the granite appearance is given by the mixing. There is, however, a feeling of delicacy and a sense of regret as to giving the minutiae of details. Our correspondent is quite right in asking, and in the legitimate way, through our Editors. Other inquiries have come in a private way desiring answers to be given in our serial, as to the expense of granite polishing, and the very minutiae of the treatment of those Vines so summarily dealt with; one gentleman saying he cannot see how such severed Vine-stems with merely a few inches stuck in the ground, could be made to grow and fruit under any ordinary treatment. Of course they had more than ordinary treatment. I can pretty well see every move that was taken, but then I did not actually see the moves. No class of men have ever so freely communicated their experience for the general benefit as gardeners, and too often with but spare thanks for their liberality. A friend told me the other day, "We are used like an orange—get well sucked, and then are treated as the rind is." We have little of the morbid, and do not believe we could keep anything like a secret of our own, if we tried ever so much. We think, however, that the owner of the orange should have the privilege of squeezing out the juice; and as Mr. McDonald is sure to see this, we must leave the minutiae to be dealt with as he judges best.—R. F.]

VERBENA CUTTINGS.

Is it generally known that Verbena cuttings will strike in sand equally well and quickly with or without a second joint below the surface? If not, it should be made known, as the number of cuttings made available by this means is very much increased. Also, I may state, that early in October I put a pan of cuttings in this way, and although the frost had previously nipped them, they were all well rooted at the base of the cut (not from the joint, though that was below the surface of the sand), early in December. They stood in the greenhouse, a cool one, without any glass, &c., over them, and the only attention given was keeping the sand moist.—H. C. K., *Rectory, Hereford.*

[The above fact is well known, also that every Verbena joint will make two cuttings by splitting the shoot through the joint; but it is useful to remind people of such things at this season. We thank you for the hint, and we shall enlarge on it soon.]

ICE-HOUSES AND ICE-KEEPING.

HAVING had some experience in ice-houses and ice-keeping, perhaps that experience may be of use to some of your readers.

I have assisted in filling several large ice-houses—those built in the usual way in the form of an egg with brick and stone, which must have at least from 400 to 600 lbs.; and it was only in certain seasons that the ice kept longer than August, even when none was taken out for use—partly, I think, because they were not large enough. It was certainly the case with the one here, and which was done away with owing to alterations which were made on the ground near it.

Seeing the failure of the expensive brick and stone one, my employer was determined to try one of the form that the Canadians used, made of wood. It was put up exactly according to plan and specification, and cost somewhere about £40 or £50. It held about seventy-five or eighty Scotch cartloads. It certainly kept ice better than the old one, but not sufficient for a full supply.

Within a few yards of this house was a long hole 26 feet in diameter and 5 feet deep—in fact it was the first hole made for the Canadian ice-house; but the sides slipped in before the framework could be put in, and it was thought the best and easiest way to make another, where only two sides of the hole had to be dug. Previous to its falling-in a drain had been made to take away the water, and three feet of sandstones had been put in the bottom for drainage.

After filling the ice-house, and having plenty of ice, we smoothed down the sides of this hole, and filled it with ice, thinking it would supply the demand throughout the summer and reserve that in the ice-house; but it turned out that the stack supplied all the demands of the family, and we had ice there when it was all done in the house. We kept filling both for five years with the same results, until the wood of the house was completely rotten, and which would have required to be

renewed again in that short time. But for these ten years past we have had abundance for the cook, butler, and dairymaid all the summer. We have now at least thirty cartloads, and last year the same.

The hole when empty holds 170 or 180 cartloads, but 80 or 100 cartloads, in addition to what was remaining in it, have filled it for some years past.

The carts are not large, or rather they are not loaded with more than what lies easily on, as we have only 40 yards to cart it from the pond to the stack. Two carts are used, and fourteen or fifteen men fill the hole in a day. The carts, when the ice comes up to the level of the ground, are driven over the top of it, and eight or ten men are kept breaking it with wooden mallets. When the ice is so high that the horse cannot get up, it is thrown up with shovels as high as it can be raised, and then covered over with straw laid on about 2 feet thick, in bunches and made a little smooth; a few straw ropes are thrown over this, and these ropes are tied to a piece of stick at each side to prevent the wind from blowing away the straw. Both the ice-house and stack are in a plantation shaded from the sun with large trees. The soil is a wet, cold, clayey gravel. Whenever I see frost set in I remove all the straw from the old ice, and clean all the ground about it, that the soil may be all hardened by the frost. This enables us to keep the ice clean.

Had I been disposed to enter into the theoretical principles of ice-keeping and to spin a long roundabout article on the construction of ice-houses, ventilation, &c., I had here a good opportunity, but I think it of more use to keep to a plain statement of facts; and from what I have observed here, if ever I were asked the best way to keep ice, I should reply, Let it be kept in any such hole as I have described where there is drainage to take away the water, shaded with trees if possible; or add more straw, for drainage could not be had then on the surface; but in that case it would be more expensive to get in, as it has nearly all to be thrown up with shovels, whereas in the hole a comparatively small quantity is required to be thrown up with the shovel.

The pond from which we procure the ice contains a superficial surface of 1000 yards. When the ice is 4 inches thick that on the pond fills the stack, which gives us the above number of cartloads—170 or 180. On one occasion we had a fall of snow of about 3 inches, which was partly wetted and then slightly frozen again on the top of the thick ice, when 130 cartloads were only required; as more could be laid on each cart, the half-melted snow causing it to lie better on the cart. Thus, in order to give a correct idea of the quantity of ice put into a stack, much depends on the size of the cart and the state of the ice. A thousand yards 4 inches deep give us 111 cubic yards of solid ice to put into our stack, and this supplies all demands made upon it, and no less quantity need be attempted with anything like success. I would say that in England, where the temperature during the year is higher than here, it would take 20 or 30 cubic yards more to be secure against all contingencies.—ALEX. SHEARER, *Yester*.

NEW BOOK.

English Botany; or Coloured Figures of British Plants. Third Edition. Edited by John T. Boswell Syme, F.L.S., &c., with Popular Descriptions, by Mrs. Lankester. London: Hardwicke.

THIS is a re-issue of the work long known as "Sowerby's English Botany," with additional plates of the species, or forms of species, which have been discovered since the last edition was published. In addition to the figures of the plants themselves, some of the plates are furnished with new dissections of the floral organs, and the fructification; and in this respect we should have expected to see illustrations of a more modern character than those that are adopted. Botanical illustration has in these latter days made as great progress as the science itself; and we certainly expected to have seen these dissections treated somewhat after the style of Fitch in the "Botanical Magazine," and by many of the continental artists, instead of the old-fashioned and contracted manner of those of the last century. Let us take, for instance, Plates ii. and iii., in which, with the exception of a fruit and a stamen, all the other figures are of the natural size; a single flower no larger than those better represented on the panicle, a calyx of the same dimensions, and a figure which even a pocket lens is no assistance to enable the uninitiated to

determine what it is intended to represent. If single organs are worth figuring at all they should be done on a scale which enables every detail to be shown—as, for instance, the section of a flower three or four times the natural size, showing the pistils, the insertion of the stamens, and the apicular anthers. Then there might be a section of an achene exhibiting the situation of the small embryo in the large mass of albumen: these would be illustrations at once instructive and valuable; but those that are given on the plates might just as well not be there. The figures of the plants themselves are, however, unexceptionable.

The botanical part of the letterpress has been undertaken by Mr. J. T. Boswell Syme, lecturer on botany at the Charing Cross and Westminster Hospitals. Mr. Syme is well known in botanical circles as an accomplished British botanist, and the way in which he has performed his task in the first Number of this re-issue will not detract from his reputation. He has evidently entered on the work with all his might, and he has performed it most ably. Mrs. Lankester takes the popular and historical portion, and she furnishes some agreeable information.

The work is arranged on the Natural System, and will, when completed, be a valuable addition to British botanical literature. The Number before us contains twenty-four plates of plants belonging to the order Ranunculaceæ.

WORK FOR THE WEEK.

KITCHEN GARDEN.

BEFORE the general routine of cropping commences mark out all the divisions, so that two crops of the same sort may not follow each other. It is a good plan to label every crop when sown or planted, so as to refer to afterwards. *Cabbage*, fill up any vacancies in the autumn-plantation; also, make fresh plantations of the autumn-sowing if necessary. Old Cabbage-ground which has been under sprouts since last August will now become available for other purposes. Where plenty of Coleworts have been provided, some of the latest of the July sowings will supply their place and stand over for early Cabbage. Old Cabbage-ground should be trenched and pretty well manured, as the Cabbage is a scourging crop. The general system is to follow with a second sowing of Peas, the Peas in their turn being succeeded by Celery-beds, and this course prepares again for any of the Brassica family. *Cauliflowers*, those under hand-glasses and in frames must be fully exposed during the present mild weather, or they will button-off in the spring. Sow seed on a south border to succeed the autumn-sowing. If any have been potted they may now be turned out of their pots, putting five strong plants under each hand-light. See that the spring-sown do not "draw;" if raised on heat, let them be pricked out betimes. *Celery*, sow seed in boxes, and place them in heat to produce plants for an early crop. A portion of the old may be taken up to check running to seed, and laid-in by the heels very deep. *Garlic* and *Shallots*, where the soil is not wet and stiff, they should now be planted, if not done in the autumn. Plant in rows at 6 inches apart. *Lettuce*, those in frames must have the glasses off them day and night while the weather continues so mild as it is at present. Make a sowing on a south border to succeed the autumn-sowing. *Peas* and also the *Beans* sown in pots or boxes to be hardened by degrees in the cold frames, preparatory to transplanting to the open ground. *Rhubarb*, pots may now be placed over the roots and covered with dung or leaves. *Spinach*, a small sowing of the round sort may be made between the rows of early Peas.

FLOWER GARDEN.

The plans for the coming season of gaiety should now be fully settled. All alterations should now be carried out without delay. Now is a fine time for the formation of beds for Bourbon, China, and Tea-scented Roses. These classes of Roses will bloom throughout the summer and autumn months. To have them in perfection it is necessary to take the soil out of the bed 1 foot deep, and to fill-up with rotten dung. Tread it firm as the bed is filled-up; place 3 or 4 inches of soil on the rotten dung, and plant in the usual manner. Prepare the Ranunculus bulbs for planting by removing all small roots. These should be immediately planted by themselves, and as but few will bloom the coming season, they will gather strength and size for the next. In arrangement diversify the colours as much as possible, and as there is such a great diversity, the character of which is now described in most catalogues, it renders the amateur's task comparatively easy. See to even small plants

being secured against wind, for these are often injured by being blown about, especially if recently transplanted, and a small stake and a few minutes' work would prevent the mischief.

FRUIT GARDEN.

If any root-pruning of fruit trees has yet to be done, let this be attended to without further loss of time, and see that trees exposed to wind are securely staked. Take every opportunity of pushing forward pruning and nailing. The extreme mildness of the present season will induce an early bloom on fruit trees. Hasten the spray of evergreens, beech branches, or spruce fir, or suspend straw ropes, &c., in front, as in all probability we shall have winter in March or April, and, the more retarded wall trees are, the greater chance will there be of a crop. Watch the smaller kinds of fruit trees—as Gooseberries, &c., and if liable to have their buds eaten by birds, dust them frequently with soot and lime.

GREENHOUSE AND CONSERVATORY.

Select young plants of *Boronias* and other New Holland plants, and give them a good shift. They delight in good fibrous heath soil in a rough state with a good portion of sharp sand and rubble or stones, with charcoal placed over the drainage and some good-sized pieces placed among the soil as the potting proceeds. The plants now potted to have the bloom picked off as it appears, and the shoots duly stopped as they make their future growth. Select the Heaths that require fresh potting and treat them as advised for the New Holland plants.

STOVE.

Commence the application of more heat in moderation. Make use of the syringe every fine morning pretty freely, except on those plants that are in bloom. Select some of the best young plants of *Euphorbia*, *Brunfelsia*, *Jatropha*, *Rondeletia*, &c., and place them in bottom heat. Cut back *Poinsettia pulcherrima*, *Eranthemums* of sorts, *Justicia coccinea*, &c. Shake out and pot in good, open, fibrous loam half decayed, with some sand and charcoal, the tubers of *Gloriosa superba*, and place them in bottom heat. No water to be supplied to the tubers until they have commenced their growth. This is a beautiful and very curious plant when well cultivated. Keep a watchful eye on the *Orchids* now commencing their growth, and see that there is no water from drip lodging for any length of time between the partly-unfolded foliage and partly-formed pseudo-bulbs. Syringe with tepid water the sides of the baskets, blocks of wood, &c., that have *Vandas*, *Saccolabiums*, *Arides*, *Sarcanthus*, *Stanhopeas*, &c., suspended or growing on them.

PITS AND FRAMES.

Shift those *Petunias* and *Verbenas* into larger pots from which cuttings are to be taken for the next two months. Make a sowing of *Phlox Drummondii*, and place it in a hotbed. Sow also, in a mild hotbed some Ten-week Stocks, *Asters*, and other half-hardy annuals. Give abundance of air at all favourable times, and endeavour to keep the air of the pits and frames as dry as possible. Water sparingly here at present, not using any if the plants keep healthy without it. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

FOR general matters see last week. Took occasion of a dry morning to wheel a little, as it is very undesirable to make work whilst doing work. We have often seen a wheelbarrow taken over a nice walk, and with a dirty wheel too, and the necessary cleaning-up wasted more time ten times over than the carrying the material in a basket would have required. Trenched-up ground where there had been two wide beds of Celery; the space having been previously occupied as temporary beds for bedding plants. Trenched or, rather, ridged it across that the dung at bottom might be spread equally all over; but to our mortification found that the bedding plants and the Celery plants had pretty well eaten-up every particle we had given them. To do this, a large part of one bed had to be taken up with good roots, set closely together, and earth trundled on to the necessary height. We sometimes set in earth, water a little, and then pack to the top with litter. If taken up late, and not watered well, the heads will be apt to bolt. We are sorry that so many were disappointed with Celery this season. We do not think we have had five bad heads since September, and almost the whole was the Dwarf White Incomparable, which, if it is 15 inches in height, will give you 12 inches fit for table, and is just the sort for the

amateur and cottager, as it needs so little room. We had four and five rows across in beds about 4 feet wide. No Celery can be crisper or sweeter, though of course you do not make your friends astonished by looking at huge mounds and plants 4 feet or more in height, and as thick in diameter as a man's thigh, and with no such wondrous hearts after all. There were a few grubs on the leaves which were picked off, and soot and a little resinous sawdust thrown over the plants to prevent the fly depositing more of its eggs. Have sown for the first crop; have sown other years before Christmas, and had no run heads. The mere time of sowing has little to do with it; that is solely the result of checking the plant before planting-out, and giving it anything but natural treatment afterwards. Sowed more Dwarf Kidney Beans in heat, a few Broad Beans under cover, and some tender herbs for flavouring, as Basil &c., reserving the general sowing until March and April. Stirred the soil among young plants, and gave plenty of air to Cauliflowers, &c., to keep them hardy.

FRUIT GARDEN.

Gave a little water to Figs, so that the roots may be thoroughly moistened gradually; and the general work, outside and inside, the same as last week, taking every chance to syringe the walls with soapuds, with the addition of a little lime and a handful of salt to the score of gallons, which helps to keep the trees free of green moss and lichens. Potted-off a few Melon plants.

ORNAMENTAL DEPARTMENT.

Outside and inside much the same as last week. Brought a few small *Fuchsias* from a cool shed, where they can be forwarded in a little heat; will introduce some larger ones as soon as room can be found. At present the plants are dry rather than damp, but not dust-dry; syringed them overhead; will finish pruning, so that they shall break near home. When it is desirable to make large plants of last season's cuttings they should have a bottom heat of 70°, and a top heat of from 55° to 60°. The great work of the week, besides attending to necessary watering and cleanliness, has been potting-off Variegated *Geraniums* that were standing too thickly in boxes, examining the old plants which had been treated on the faggot system, putting in cuttings of new and fine kinds, and going right-ahead with *Verbena*-cuttings, putting them chiefly in half-circle-drain-tiles, with a thin piece of clay at each end, and setting them on a bed of leaves, with 2 or 3 inches of dry ashes over them, and the help of a water-pipe in front. At this season, with just a skiff from the syringe on a sunny day, they will need no shading. This is one of the best modes we have tried, except planting the cuttings out at once into beds, and for this we have no bed at present at liberty, and besides we would prefer doing it in the beginning of March, instead of the beginning of February. Those put in tiles now—say three plants to 10 inches—will afford cuttings by that time. Some may like to try the bed-system, and this is how we used to do it: Make-up a bed of leaves, or dung, or whatever can be had, that will raise a bottom heat of from 80° to 85°. Firm the surface, place on it a couple of inches of rotten dung or leaf mould; then riddle some rough sandy loam through a half-inch sieve. Keep the rough riddlings, mix that with an equal quantity of rough decayed leaf mould; make level, and then sieve 1½ or 2 inches more. Cover this with the fine soil—if not sandy, add enough to make it gritty and open—and make this also 2 inches in thickness; beat down with a quarter of an inch of sand thrown over, and gently pressed. Then stick in the cuttings with a bodkin-dibber, or, as Mrs. Bird does her *Calceolarias*, putting the cuttings 1 inch apart in the row, and 2 inches from row to row; water; keep close; give a little air at back at night, if only an eighth or a quarter of an inch; shade a little in bright sunshine, when a skiff from the syringe would not prevent the cuttings perspiring too much; give air by degrees as the roots are formed; and by May you will have fine strong plants with roots hanging in the leaf mould, and which may be taken to the beds, and scarcely feel the moving.—R. F.

TRADE CATALOGUES RECEIVED.

Smith & Simons, Glasgow.—*Cultural Guide and Descriptive Seed Catalogue.*

Robert Parker, Tooting, S.—*Catalogue of Agricultural, Flower, and Vegetable Seeds, Fruit Trees, New and Rare Plants, &c.*

W. Wood & Son, Maresfield, Uckfield.—*Catalogue of Seeds with an Appendix, comprising Roses, Fruit Trees, &c.*

Downie, Laird & Laing, 17 South Frederick Street, Edinburgh, and Stanstead Park, Forest Hill.—*Descriptive Catalogue of Florists' Flowers, and List of Vegetable and Flower Seeds, &c.* 1863.

Hooper & Co., Central Avenue, Covent Garden Market, London, W. C.—*Spring Catalogue of Flower, Shrub, Tree, and Kitchen Garden Seeds.*

A. Stansfield & Sons, Tadmorden.—*Catalogue of Stove, Greenhouse, Hardy Exotic, and British Ferns.*

Charles Turner's *Catalogue of Seeds for the Kitchen Garden, the Flower Garden, and the Farm.* Slough, 1863.

W. Thompson, Tavern Street, Ipswich.—*Descriptive Catalogue of Flower Seeds, 1863.*

F. & A. Dickson & Sons, Unto Nurseries, and 106, Eastgate Street, Chester.—*Catalogue of Vegetable, and Flower Seeds, &c.* 1863.

TO CORRESPONDENTS.

BLIGHT (H. G. M.).—It is no fungus which has attacked your Orange trees, &c., but the common aphides or green fly. Foregathered and springing will destroy them. They will be kept away by more moisture and a freer admission of air. Some injury to the roots of your cyclamens causes the abortive flowers.

BOATSWAIN (T. C. B.).—Filtering the suds through earth may be effected either by ascent or descent, as fully explained in the pamphlet published at our office, entitled "Muck for the Many." Some of the fertilizing parts of the suds would be detained by the earth. We use sossups unfiltered as a manure. You may have the Journal direct from our office, free by post, by prepaying 12s. 6d. per copy, or 5s. 6d. for six months.

ROSE CUTTINGS (G. R., St. Ives).—The only practical direction that can be given about cuttings of the old wood of the previous season is, that it will not come from cuttings "now in the open air in spring out of doors." But there is an easy way of rooting now all the young wood of all the prunings of all kinds of Roses, and that is to graft on six-inch lengths of Rose-shoots; and the roots of any sort of Rose are just as good for this mode of propagation as the roots of Dog or Manetti Stocks, as the graft must be planted so deep as to bury the grafted parts just 2 inches below the surface, so as to have the top but of the graft just within the soil and no full an inch. Then roots come from the grafts themselves before the summer is over, and the rootstocks may then be cut off for fear of making suckers. All this grafting can be done at home by the fireside, and such grafts if put into a box or basket in damp sand, will keep three weeks without being planted until the weather be bad. During this time the growth of last summer will thus graft if ripe and falling in the very bottom of the graft, an eye within half an inch of the top of the graft, and one or more eyes between the two. So there is no reason to waste an inch of the Rose-shoots. If the Rose, if it is pruned from the middle of February to the middle of April.

WHICH WOOD IS MOST VALUABLE? (J. T. P.).—This is a question which cannot be answered without knowing the locality where it is to be grown, and the purposes for which it is required. In some places the wood of the Poplar would be as valuable as that of the Oak. Your question reminds us of the following extract from the *Journal of Horticulture* for the summer of 1775, and entitled "Legend of the Tree of Life":—"Trees and woods have twice saved the world—first by the ark, then by the cross; making for sinners the evil fruit of the tree of Paradise, by that which was borne on the tree in Gogoltha."

SPRING CUTTINGS OF VARIEGATED GERANIUMS (Country Curate).—You are wrong on two very essential points. You water the spring cuttings of the whitest and more soft kinds of Variegated Geraniums "every three or four days according to the weather;" but one watering in three weeks in February and March is often all they can bear in a moist propagating-bed. We have struck those you name by the hundred without ever giving the soil in the pots a drop of water, but only a little damping with the syringe in the afternoons of very sunny days in March. The next error is setting the cuttings-pots for a week or ten days on a shelf in a moist propagating-house, "where, by the way, they would rot without watering later in the spring. Try them thus!—Cut very close below the joint after breakfast, and put the cuttings in a dry place till the afternoon for the cut ends to dry a bit; then push them in, and plunge them in bottom heat from 70° to 80° the same evening, so that the drop of water the first week, and only to the leaves afterwards; but the outside of the pots must be moist all the time from the dampness of the bed.

BEST PLANTS FOR EXHIBITION (A Young Exhibitor).—You are six months too late now, and you will not win a prize this season. All the "best kinds" are now three-parts grown and settled in the summer. Look to the lists of prize-taking plants at the last year's exhibitions.

DESTROYING WEEDS ON WALKS (Jardinier).—We certainly think there are many things more likely to be destructive to weeds than a mixture of lime and sulphur boiled together. This might, perhaps, be recommendable in giving colour to the pavement walks you speak of; but a sprinkling of salt or a strong solution of it would be more destructive, and there are many other substances as well as salt for this purpose. We have known a cheap preparation of arsenic very effective, and one in which copperas was used also good, but the last-named article left a stain behind it. For safety, simplicity, and cheapness salt is the best of all. The only fault it has is that it causes the walk to have a damp appearance at times. Small quantities often repeated after the first dose generally keep all vegetation down; and never prevent the walk as is likely to penetrate to the roots of trees below the walk's surface.

RIDDELL'S BOILER (G.).—Unless great care is exercised, all fires and moves inside of houses are apt to produce dust and a little smoke at times. In your circumstances, if it could be done easily, we would keep the boiler inside, but so placed as to have the feeding-door outside. Whatever may be stated in advertisements we have no faith in. The boiler or furnace heated by fuel or gas that has not a pipe to carry off the smoke and other products of combustion.

GERANIUM TULIFIFERA (Ignoramus).—This is the *Hedera tulipifera*. The culture of it is very easy, being the same in every respect as that of *Epacris* and all the other round.

CENTAUREA CANDIDISSIMA (C. W.).—*Centaura candidissima* is the best ribbon-border white-leaved plant yet known, and it has no other equals in the plant lists. No seeds of it have been offered yet for sale as far as we can learn.

CONTINERS (F. B.).—You mistake the question. All the hardy Conifers would feather down to the ground with their branches if they were treated for that way of growth as the soft-wooded plants are. D. B.

FURNACE FOR GREENHOUSES.—I have built a furnace as recommended by "J. S." in your issue of November 11th, but find that the fire does not heat well in thick muggy weather. "J. S." will, therefore, oblige if he will state what sized fire should be used, as it is just possible mine may be too large, being 12 inches by 12. My house is 17 feet by 12, and the fire is 16 inches by 12 inches square. Should the fire always be lighted at the top? J. B.

MELON SEEDS (J. Dunn).—Thanks for the Melon seeds. We shall have them sown in the original form.

PROPAGATING PINELAE SPECTABILIS (F. F.).—If there are a few short stubby shoots on your plant, from 2 to 3 inches long, you may slip them off as cuttings now; if not, wait until the plant has few degrees higher than it back, and when started afresh, from being a few degrees higher than it back, in a closer atmosphere, you may then cut the young shoots. When about 24 inches long take off close to the old wood, trim the bottom half, and insert in silver sand over sandy peat, and cover with a bell-glass, and the cuttings may be placed where they will have an advance of 5° or so for a fortnight, and then be plunged in a mild bottom heat of from 70° to 80°. Put them first in sandy peat, and as the plants grow larger and shifts are required, add a little dry loam.

MRS. POLLOCK GERANIUM BECOME GREEN (T. D.).—The dull winter and rich feeding would have a tendency to produce the result complained about; but we know so little of the means of bringing back the variegated form, but we could advise you to do nothing but to cut the plants pretty well down, and keep the roots rather dry. They break afresh. This we have sometimes found effectual, but not always. The great secret in the management of these variegated Geraniums. When we plant them out in poor soil we are more apt to keep the variegated form; but then the leaves come, being 12 inches by 12. My house is 17 feet by 12, and the fire is 16 inches by 12 inches square. Should the fire always be lighted at the top? J. B.

WOODEN FENCING (A. T.).—For a wooden fence 6 feet 6 inches high in the mountains of Lancashire, and to be covered with climbers, tarring the fence would be better than painting; or, if you paint it, the stone-coloured anti-corrosion paint is that we would use ourselves in that region of clouds and rain. Use some good strong iron wire, strain up 6 feet only, but some good common hardy shrubs, with here and there running Rose, a Jasmine and Honeysuckle, or a Clematis, but not nearer than 15 feet apart, Laurustinus, Berberis, Spiraea, or what are known already to grow well and answer in that part of the country.

FLOWER-GARDEN ELIAS (Suburban, Aberdeen).—Were it not that you had sent for our advice we should have thought Sir Joseph Paxton had made your flower-garden plan. It is a perfect beauty. To plant Roses or any plant higher than 18 inches in the sunk oval, in the centre of the garden, would defeat the aim of sunk plants. Raise them up as it were to the original level, or higher still by the height of the plants placed in the sunk parts. All your best and lowest of the bedders must be planted in that sunk oval, and not Roses. The two 7-beds, the two 16-beds, and the two 10-beds are your beds for Roses; the two 5-beds and two 19-beds for pillar Roses, and the two 19-beds ought to have some permanent evergreen; but this garden would look exceedingly well if only the two No. 7 beds were in Roses.

PLANTING ROSES (Anxious Inquirer).—The calendar says truly, the sooner Roses are planted, at the end of January, the better, although "that does not exactly fit your case." The how much later Roses can be planted with "safety" is this: They can be planted to the very middle of May and be as safe from dying outright as if they were planted at the end of October; but then they will do you little credit for the first two or three years. But the worst part of the story for a young gardener is the "you must order the plants to be sent to you as soon as you can ascertain how many will be wanted"—that is, perhaps you will be able to order the Roses at the end of February—just two months after the best plants, the second best plants, and the third best of all the best Roses, except the best old kinds, have been picked over and over again by the gardeners who do their work at the proper time. When you are "all right" tell us the kinds and the distances you mean to plant them, and we shall give our opinion on the merits of your plan.

GARDENER'S ADVERTISEMENT (R.).—Half-a-crown for each insertion. Moving Machine (Single-handed).—As you intend to impel it yourself, buy the machine, for that will be certain to require the least power, if kept oiled and free from rust.

CAMELLIAS (J. B. D.).—A basket has been received, the carriage of which was not paid.

WILD FLOWERS OF GREAT BRITAIN (T. Bell).—The work will contain all the flowering plants. We have not a prospectus left, but you will find it printed on the cover of each monthly Number.

ERYTHRAEA (Erythraea).—We have published the treatment of these plants often, and in the autumn and winter we would prefer those plants now that have fewest leaves on them. If the shoots of the head are large we would prune them back, and when the shoots were 14 inches long we would shake the most of the soil from the roots, and replot in strong rich loam, packed as firmly as the hands would permit; water, and keep shaded for a week, and as they grow give manure. If the wood was ripened last autumn, then every strong shoot thus made will produce abundance of flowers. If the head of the plant is small, then merely by pinching the young plants may be enough of pruning. If the plants are kept in-doors use the syringe freely, or you will have red spider.

NUMBER OF FLOW AND RETURN PIPES (A. F. B.).—One flow and one return pipe in connection with your saddle boiler will be sufficient, whatever the number of houses to heat left and right; but, according to the number of houses, you must have socket-pipes or T-junctions. The highest placed of these will generally heat the most powerfully, and regularity of valves will therefore be necessary. In such a case, the simplest plan would be to take the flow-pipe into an open cistern, some 2 feet above the highest pipe in the houses, and from that cistern take a flow-pipe to each part to be heated, to be controlled by plug or valve. All the return pipes must join the main return before it enters the boiler. We do not quite understand whether the boiler will not heat the several houses, or whether you merely wish some to be heated at one time and the rest at another time. The above is the simplest; if there is no cistern, then the different flows must be regulated by valves.

GAS LIME (A Three-years Subscriber).—The more clayey the soil the more gas lime you may put upon the soil to destroy the vermin in it. Two inches depth of the gas lime, thoroughly mixed with the soil, will not be too much. You must not plant anything on soil so treated until at least a week has elapsed.

FRUITS FOR AN EAST WALL (A Subscriber).—You will find the Royal Apricot do well on an east wall. You may also have Marie Louise, Winter Nelis, and Beurré Rance Pears; and Purple Gage, Green Gage, and Jefferson Plums.

CISUS DISCOLOR (A Subscriber).—It is one of the very easiest plants to grow of all stove plants. Give it a little of stove, and the consequence is a Puchsia, or Geranium, or Chrysanthemum, and the difficulty would be to know how to prevent it doing better than any other stove plant; and as to rooting cuttings of it, none root more easily. Your plants are No. 1, Begonia hyacinthifolia; 2, Echinanthus pulcher.

CALADIUM STARTING (Idem).—The question of starting Caladiums is like the question of starting Grape Vines, only a matter of convenience and cost. You may start Caladiums any day from the first of the new year, they will start of their own accord at the end of the spring. The starting of cuttings, and the sowing of all flower seeds in the spring, are just on the same principle as the starting of Caladium "roots." We saw many thousands of seedling Lobelia speciosa just sprout the first week of last January, and Lobelia speciosa will be in quite time enough for ordinary work if it is up by the 30th of March. Just so with Caladiums. When you can give them 75° of bottom heat, and you are sure they will have sufficient room, and from 56° to 75° of close moist heat, without check or hindrance, you may start. But first examine every root, and see, if there be a speck of decay on it; that is looked to before potting; give very small pots to begin with, and no water at all. Amateurs destroy their Caladiums, Cape bulbs, and Gladioli by acting as if it is a "root," which will keep for months in a dry state, they must have water the moment it is put into a pot. We never water a "root," even a water "root," until the leaf is well up above the pot, it is for were for three months after potting. But the soil potting time should be moist, and be kept so, in the dark and with some covering, till the leaf comes.

PROPAGATING SKEIN RHODODENDRONS (A Subscriber since 1856).—Grafting will suit your purpose best. Next month place the stocks of ponticum into a pit or frame; if there is just a little bottom heat all the better. When you start the stock over, and no water at all, the side, split two or three buds on the sort desired; tie, keep the place close and with a moist atmosphere. Sometimes, when you merely tie on a bud or two, it is desirable merely to nip-out the point of the stock, and only cut-back when the bud is growing. When you cut-back on a piece of shoot with its point, you must prefer cutting the stock over.

WIREWORMS (Idem).—A little ammoniacal water from the gasworks, or a bucket of fat scattered thinly, will cause the wireworms to decamp. For catching them, nothing is better than slices of carrots inserted in the soil and every morning.

NAMES OF PLANTS (A Reader).—1, Adiantum canescens; 2, Asplenium flabellifolium; 3, Some young Diplazium; 4, Miserable Pteris hastata; 5, Selaginella denticulata; 6, Taronia pinnatifida; 7, Aloe variegata; 8, Asplenium trichomanes; 9, Pteris tremula; 10, Isolepis gracilis; 11, a leaf we do not recognise. No one should send more than half a dozen specimens at a time. (F. G.).—1, Nerium Oleander; 2, Rhododendron dauricum atrovirens. You must send the others in flower. (F. S.).—Benthania fragrans. (A Appleton).—Your plant is Hexacentris myrsocina. Each volume you require, and which we can supply, will cost you 8s. 6d. (A 30-year Subscriber).—Your morcel from a window plant in Suffolk is the smallest-leaved kind of all the Horehounds, and is called Marubium pseudo-dictamnus. It is too too slender for the flower garden.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY FOR THE LONDON MARKET.

POULTRY may come to London from all parts. A poultry show would be impossible without railways; and that which makes a show possible makes it easy to send surplus poultry to London. Peas and asparagus come from Algiers and France; new potatoes from Cornwall. They not only find a sale—they are looked for. It is just possible they were not at first. Of the early ventures, some were failures, perhaps, but senders were not discouraged, and they are now known, and they know their trade. Those who provide early delicacies are seldom among the rich. The seasons do not yield without a struggle; heat must fight against frost, and a dry and even temperature must promote and equalise growth. In chickens, little attentions by candlelight must shorten nights, and well-chosen and varied food must provide the internal heat that will radiate and form its own atmosphere. Such attentions are troubles, and are seldom undertaken by those who are well off. Neverthe-

less, a clergyman, his wife or daughter, has often contributed material help to a club or a poor family. Or one of those humble invaluable—the single lady of the village, the sister of a former vicar, the widow of the popular surgeon who was cut off by fever while attending the poor, or the unmarried daughter of the lawyer who died some time before—these blessed visitors often get a little help from poultry (none know so well as these, that empty-handed sympathy is poor work). These will rear their chickens and think they are well paid for their trouble, when the few shillings alleviate some poor person's pressing want, or help them out of trouble.

Poultry-keeping by cottagers in England is out of the question. They have not space, and the abominable system of field work for women renders it impossible. While in Germany, prices, and in France, gentlemen, make it a calling, it seems *infra dig.* in England. More fowls are kept than were kept a century ago, yet fewer come to market. There are sometimes apasmotic attempts in certain districts, but they die out. The small farmer and the small landowner disappear. The stream overtakes them, and swallows them up. With them goes the poultry. South-downs, Short-horns, and Berkshires take its place.

Fashion has done, one thing;—it has made it correct to breed poultry, and to exhibit it. Every one is anxious to sell it alive; but regular fattening is not to be thought of. Why should it be? By a strange perversion, you may take a delicately-brought-up lady who has been the ornament of a town circle, move her into the country and she will undertake poultry or anything of the kind, while her counterpart reared and living in the country will not look at anything of the sort. When we have sought for the cause, we have been told "it does not pay." We differ. All want the highest price; but all do not provide the best quality. Large prices only belong to those who send their goods at the most propitious time. In poultry, that means in the early season. The real demand for expensive poultry is from the latter end of April to the beginning of July. The chickens must be chickens of the year, and must not weigh less than 2½ or 3 lbs. each. They must be moderately fat, well killed and pickled, and fasted. There will always sell at remunerating prices—from 7s. to 9s. the couple—often more. It is, however, useless to undertake this unless with a determination to succeed. Little chickens in June are spring chickens, and may be rare in the country they come from, but they are unsaleable in London because it is their natural season, and there is a glut of them. Very often the chickens that are sacrificed in May by being killed before they have attained proper growth would, if they were allowed to live till June, make a large price. We call the attention of those of our readers who have inclination and leisure to the subject, and we shall always be glad to give instruction or answer queries.

NANTWICH POULTRY EXHIBITION.

FEBRUARY 6TH AND 7TH.

SPANISH.—First and Second, W. Woolley, Banbury. Third, J. B. Bruce, Keele. Highly Commended, J. Groot, Haughlin. Highly Commended, J. Gibson, Over. **CHICKENS.**—First, W. Woolley. Second, J. Hulse, Winsford. Third, J. A. Sheen, Tilsdon. Highly Commended, J. B. Bruce.

DUCKS (Any variety).—Plate Prize, A. Heath, Winsford. Second, J. Groot, Haughton. Third, H. Akroyd, Dodington. Ducks (Rinn, Fries, J. B. Bruce, Keele. Second, R. Cooke, Jan., Darnhall. Third, T. Burgess, Burleydam.

DUCKS (Any other variety).—First, R. Cooke, jun., Darnhall. Second and Third, E. Bowers, Broad Lane.

GESE.—First, W. Fennell, Norton. Second, J. Sheen, Tilsdon. Highly Commended, T. Walker, Betley. Commended, E. Bowers, Broad Lane.

TURKEYS.—First, Mrs. Akroyd, Dodington Hall. Second, W. H. Horaby, Shrewsbury Hall.

DORLINS (White).—First, Mrs. Tollemache, Dorfold Hall. Second, E. Cooke, jun., Darnhall.

DORKINGS (Any other colour).—First and Plated Tespot, Mrs. E. D. Broughton, Wistaston. Second and Third, E. Tudman, Highchurch. **CHICKENS.**—First and Second, E. Tudman. Third, Mrs. Tollemache, Dorfold Hall. Commended, Mrs. Tollemache; T. Burgess, Burleydam.

COCHIN-CHINA (Cinnamon, Buff, and Partridge).—First, Second, and Silver Cup for best pen in the Exhibition of any kind of poultry, E. Tudman, Highchurch. Commended, T. Rigby. **CHICKENS.**—First and Second, E. Tudman.

COCHIN-CHINA (Any other colour).—First, J. Dodd, Minshall Vernon. Second, G. Williamson, Nantwich. **CHICKENS.**—First and Second, J. Dodd.

A Silver Cup, presented by the Licensed Victuallers of Nantwich and neighbourhood, for the best Game Cooker of any colour, exhibited specially for this prize. Victuallers' Cup, W. Galley, Nantwich. Second, E. D. Broughton, Wistaston. Third, E. Ashley, West End. Fourth, T. Burgess, Burleydam. Highly Commended, J. Platt, Darnhall; T. Burgess; J. Heath, Nantwich; Commended, T. Burgess; J. Heath.

GAME COCKS (Sweepstakes).—Prize, T. Burgess, Burleydam.

SINGLE COCKS.

GAME (Black-breasted Reds).—First, J. Wilkinson, Norbury. Second, T. Moore, Nantwich. Third, J. Heath, Nantwich.

GAME (Brown-breasted Reds).—First, T. Whittingham, Batherton. Second, J. Pedley, Nantwich. Third, J. Heath, Nantwich. Highly Commended, T. Burgess, Burleydam. Commended, T. Burgess; R. Ashley, West End; J. Heath; E. Bowers, Broad Lane.

GAME (Any other colour).—First, T. Burgess, Burleydam (Black). Second, A. Heath, Winsford. Third, Miss Sadler, Heath Cottage, Whitchurch. Commended, T. Burgess (Black).

GAME (Black Reds).—First, J. Grocott, Haughton. Second, J. Pedley, Nantwich. Third, J. Heath, Nantwich. Highly Commended, J. Heath. Commended, T. Moore, Nantwich; A. Heath, Winsford. *Chickens*.—First, W. Ruscoe, Nantwich. Second, T. Burgess, Burleydam. Third, T. Whittingham, Batherton. Commended, T. Burgess; J. Grocott.

GAME (Brown Reds).—First and Plate, E. Bowers, Broad Lane. Second, S. Edwards, Nantwich. Third, Dr. E. Bellyse. Highly Commended, T. Burgess, Burleydam; J. Heath, Nantwich. Commended, J. Pedley, Nantwich. *Chickens*.—First, W. Galley, Nantwich. Second and Third, T. Burgess. Commended, R. Latham, Woore; J. Grocott; J. Heath; H. Holland, Nantwich.

GAME (Any other than Black or Brown Reds).—First, Miss Sadler, Heath Cottage, Whitchurch (Grey). Second, T. Burgess, Burleydam (Black). *Chickens*.—Prize, Master E. W. D. Broughton, Wistaston (White).

GAME HENS (Any colour).—First, A. Mountford, Keele (Brown Reds) Second, W. Hope, Newtown (Brown Red). Highly Commended, T. Burgess, Burleydam (Black-breasted Red). Commended, T. Whittingham, Batherton (Black Red).

HAMBURGH (Golden-pencilled).—First, W. H. Hornby, M.P. Second and Third, G. Williamson, Nantwich.

HAMBURGH (Silver-pencilled).—First and Second, D. Harding, Middlewich. Third, Rev. A. Silver, Norton.

HAMBURGH (Golden-spangled).—First and Hamburgh Silver Cup, T. Burgess, Burleydam. Second, R. Foster, Marsh Lane. Third, J. Dutton, Bunbury.

HAMBURGH (Silver-spangled).—First and Third, T. Dale, Middlewich. Second, J. B. Bruce, Keele. Commended, T. Dale; R. Foster, Marsh Lane.

POLANDS (Any variety).—First and Second, J. Heath, Nantwich. Third, G. Williamson, Nantwich. *Chickens*.—First and Second, G. Williamson, Nantwich. Third, Mrs. Sproston, Middlewich.

BANTAMS (Game).—First, W. Griffiths, Nantwich. Second, J. G. Pearson, Whitchurch. Third, J. Grocott, Haughton.

BANTAMS (Any other variety).—First, T. Butler, Middlewich (White). Second, S. Boffey, Willaston (Spangled). Third, withheld.

GAME BANTAM COCKS.—Plate, W. Griffiths, Nantwich. First, T. Stanyer, Nantwich. Second, J. G. Pearson, Whitchurch.

PIGEONS.—*Carriers*.—First and Second, W. Woolley, Dunbury (Black and Dun). Very Highly Commended, J. Hockenhuil, Nantwich. *Dragons*.—First, D. Harding, Middlewich (Blue). Second, F. Davies, Eardswick (Black). Highly Commended, J. Hockenhuil. *Pouters*.—First and Second, W. Woolley (Red and Blue). Highly Commended, W. Crawford, Nantwich. *Barbs*.—First and Second, J. Hockenhuil. Very Highly Commended, W. Crawford. *Nuns*.—First, J. Dutton, Bunbury. Second, J. Hockenhuil. Highly Commended, T. Horton, Leighton. *Beards*.—First, S. Cawley, Priestland (Blue). Second, J. Hockenhuil (Blue). Commended, J. Hockenhuil. *Balds*.—First, J. Withinsaw, jun., Nantwich (Black). Second, T. B. Davies, Eardswick (Black). Highly Commended, T. B. Davies (Black). *Any other variety of Tumblers*.—First, F. Cawley (Red Mottles). Second, W. Crawford. Commended, H. Prince. *Fantails*.—First, H. Prince (Black). Second, C. B. Davies. Very Highly Commended, Miss A. Tollemache (Blue). Commended, J. Hockenhuil (Black and White); Miss A. Tollemache (Black). *Jacobins*.—First, J. Hockenhuil (Yellow). Second, C. B. Davies (Black Balde). Commended, J. Hockenhuil (Red). Highly Commended, T. B. Davies (Black). *Trumpeters*.—First, T. Horton (Black). Second, F. Davies (White). Highly Commended, T. Horton (Black Mottles). *Owls*.—First, J. Hulse, Winsford. Second, W. Betley, Nantwich. *Turbits*.—First, S. Newbrook, Nantwich (Red). Second, J. Withinsaw, jun. (Blue). Highly Commended, J. Withinsaw, jun. (Blue). Commended, J. Dutton (Blue). *Any other variety*.—First, J. Dutton (Labores). Second, J. Hockenhuil (Archangels). Highly Commended, J. Dutton (Magpies). *Doves*.—First, J. Cooper, Nantwich (White). Second, J. Hockenhuil (Ring). Commended, J. Hockenhuil (King and White); G. Green (Ring).

SINGING BIRDS.—*Canaries* (Yellow).—First, H. Sumner, Nantwich. Second, S. Williamson, Nantwich. Highly Commended, R. Wood, Nantwich. Commended, H. Sumner. (Buff).—First and Second, H. Sumner. Highly Commended, R. Wood. (Any other variety).—First, C. Indley, Crewe. Second, S. Williamson, Nantwich. Commended, S. Williamson. *Brown Linnets*.—First, T. Moulton. Second, R. Williamson, Nantwich. Highly Commended, H. Timmis, Walgherton. Commended, W. Basford. *Goldfinches or Red Linnets*.—First, H. Sumner. Second, R. Williamson, Nantwich. Highly Commended, H. Sumner. Commended, D. Robinson, Nantwich. *Skylarks*.—First, J. Willett, Nantwich. Second, T. Williamson, Nantwich. Highly Commended, J. Willett; T. Williamson. *Bullfinches*.—First, W. Williamson. Second, D. Robinson. Highly Commended, J. Willett, Nantwich; W. Williamson. *Woodlarks* (not for competition).—Prize, S. Williamson, Nantwich.

RABBITS.—*For Long Ears*.—First, W. J. Sheen, Tilston. Second, C. Lees, Sandbach. *For Weight*.—First, E. Woolley, Bunbury. Second, S. Bullock, Nantwich.

APOPLEXY IN FOWLS.

A. B. would feel obliged if any light could be thrown on the complaint of which her Dorking fowls died. One, a fine hen she lost a few months since, did nothing but sleep for about ten days, did not appear to suffer, and its comb retained its beautiful colour. It ate when food was offered. Medicine did no good, and it died, bringing-up at the last a quantity of coagulated blood. A Dorking cock lately was similarly affected; but in his case his head was continually going round. Medicine and bleeding in the foot were tried, but without effect, and at

last he was put out of his misery. Was it apoplexy? The cock's comb turned black; not the hen's. There was no over-feeding.

[There is no doubt that the fowls died from apoplexy, and if their heads had been opened a clot of blood would have been found on some portion of the brain. If our correspondent knows, from having the body opened, that the birds were not fat, the usual cause of such attacks, then either great frights or other excessive excitement was the probable cause. If no such cause can be discovered, then we fear there must be an hereditary tendency to an excessive flow of blood to the head.]

CRYSTAL PALACE BIRD SHOW.

AMONG the many exhibitions of the country there is not one more interesting than that of Canaries and British and Foreign Birds at the Crystal Palace. We have now the pleasure of discussing the merits of the fifth annual Show. It is again our most pleasant duty to congratulate the management upon the great success of the undertaking from its commencement.

It has now successfully passed the trying ordeal of five seasons, and we venture to state that for the future it may be looked upon as an established annual Exhibition, and as taking first class with its contemporaries. We were pleased to notice the considerable preponderance of the fair sex in the number of visitors on Saturday. It shows that they are much interested in the welfare of Nature's smallest pets. We do not know an exhibition of zoology more suited to the tastes of ladies than this, and we are glad to notice that there are a great many lady competitors on the list. One might almost fancy that it is the middle of summer instead of winter, in such a delightful place as the tropical department of the Crystal Palace, with its beautiful and luxuriant plants, and the sweet notes of the little feathered prisoners, which seem to endeavour to surpass each other in sending forth their carols.

The collection is on the whole an extremely fine one; and it is evident that the admirers of this class of ornithology, both dealers and amateurs, have not failed to exert themselves to bring the specimens to perfection.

The Judges, we fear, must have had a very difficult and not altogether an agreeable task to perform in awarding the prizes to so many birds, the defects of which none but those who have made them a study can detect, as a feather missing here or a toe there can alone sometimes decide which is deserving the honour of a prize.

We could not, were we compelled to do so, commend any one class specially; it is almost next to an impossibility. However, we will notice one or two of the most interesting specimens. The British birds form quite a collection of themselves, and are in beautiful condition and splendid plumage. Among the curious specimens were a white Thrush exhibited by Mr. E. Hawkins, and a spotted Blackbird, the former of which, although tailless, was awarded a prize. We observed also some very curious varieties, consisting of a Goldfinch, a Grey Linnet, a Robin, and a common Sparrow, of which the two first mentioned obtained a prize. A singular and rare hybrid between a Norwich Canary and a Citril Finch from the Cape was shown, and also two beautiful Mules between a Goldfinch and Bullfinch, which were much admired, and one of which took a prize. There was also a Swallow reared from the nest, which is a very curious and unusual occurrence. Among the Foreign birds were some very beautiful and finely-coloured specimens. One of the most interesting subjects was a pair of Budgrigars, with nest, and eggs, and young.

The show of Canaries far surpassed any previous collection, both in numbers and quality. The specimens were magnificent in the extreme. The Norwich, the Belgians, London Fancy, and Lizards were most beautiful, and especially the Mule birds, in praise of which we cannot speak in sufficiently high terms.

Too much praise cannot be given to the Secretary, Mr. Houghton, for his exertions in promoting the interests of the undertaking.

CANARIES.

NORWICH, Clear Yellow.—First, T. Banfather. Second and Third, R. Mackley. Equal Third, J. Pullen. Very Highly Commended, — Collinson; R. Mackley. Highly Commended, S. Dunthorne; E. Hawkins; W. Laws; J. Pullen; Mrs. Lowth; R. Mackley. Commended, E. Hawkins; W. Walter; — Collinson. (The whole of the class very superior.)

NORWICH, Clear Buff.—First, E. Willis. Second, W. Walter. Very Highly Commended, J. Pullen; W. Walter; F. Willis. Highly Commended, R. Mackley. Commended, J. Pullen; R. Mackley. (A good class.) NORWICH, Variegated or Marked.—First, J. Judd. Second, W. Walter.

Very Highly Commended, W. Walter, R. Mackley. Highly Commended, E. Hawkins; J. Morse; Commended, J. Judd. (A good class.)
 NORWICH, Crested or any other variety.—First, R. Mackley. Second, J. Judd. Very Highly Commended, R. Mackley. Highly Commended, R. Mackley.

BELGIAN, Clear Yellow.—First and Third, E. Hawkins. Second, J. Webb. Very Highly Commended, E. Bemrose; J. Lingard; O. Nicholson; W. Triggs. Highly Commended, S. H. Goodwin; H. Marshall (Good bird, but two toes defective.) (A very superior class.)

BELGIAN, Clear Buff.—First, H. Marshall. Second, G. Harding. Very Highly Commended, E. Bemrose; O. Nicholson; W. Phillips; J. Webb. Highly Commended, E. Hawkins; H. Marshall. Commended, C. Stockdale.

BELGIAN, Variegated, or Marked Yellow.—First, H. Marshall. Second, E. Hawkins. Third, E. Bemrose. Very Highly Commended, S. H. Goodwin; O. Nicholson; E. Hawkins.

BELGIAN, Variegated or Marked Buff.—First, E. Hawkins. Second, E. Bemrose. Very Highly Commended, E. Hawkins; J. Judd. Commended, S. H. Goodwin; J. T. Wilson.

BELGIAN, Crested or any other variety.—First, J. James. Second, G. Harding. Very Highly Commended, E. Hawkins. Commended, W. Walker.

JONQUE LONDON FANCY.—First, J. Waller. Second and Third, O. Green. Very Highly Commended, J. Waller. Highly Commended, O. Green.

MEALY LONDON FANCY.—First and Second, J. Waller. Very Highly Commended, O. Green. Highly Commended, O. Green.

CANARIES, German or any other variety, except Norwich or Belgian.—First and Second, J. Judd. Highly Commended, J. Judd. Commended, J. Judd.

LIZARD, Golden-spangled.—First and Second, E. Hawkins. Third, J. Waller. Very Highly Commended, S. H. Goodwin; E. Hawkins; J. Lingard; J. Waller. Highly Commended, E. Hawkins; F. W. Fairbrass; J. Lingard. Commended, H. Marshall. (Remarkably good.)

LIZARD, Silver-spangled.—First, W. Smith. Second, J. Lingard. Third, E. Hawkins. Very Highly Commended, F. W. Fairbrass. Highly Commended, E. Hawkins; J. Webb. (Class very good.)

GOLDFINCH MULE, Jonque.—First, W. H. Morgan. Second, G. Barnesby. Third, H. Marshall. Very Highly Commended, G. J. Barnesby; W. Walter. Highly Commended, C. C. Stockdale. (Most admirable.)

GOLDFINCH MULE, Mealy.—First, F. Hook. Second, C. C. Stockdale. Third, Mrs. La Touche. Very Highly Commended, E. Hawkins; T. Brown; J. Judd. Highly Commended, S. H. Goodwin. (A good class.)

CANARY MULE, any other variety.—First, H. Marshall. Second, Master C. H. Verner. Third, J. Judd. Very Highly Commended, J. Judd.

BRITISH BIRDS.

BULLFINCHES.—Prize, Miss La Touche. Very Highly Commended, E. Hawkins; P. Nicholson. Highly Commended, W. Walter; R. Mackley.

CHAFFINCH.—Prize, F. P. Cuddon. Highly Commended, F. Hook.

GOLDFINCH.—Prize, J. Crew. Very Highly Commended, J. Lingard; R. Mackley. Highly Commended, F. P. Cuddon; W. H. Woodcock.

LINNETS.—First, E. Hawkins. Equal First, J. Judd. Very Highly Commended, H. Hanley. Highly Commended, H. V. Reid; E. de la S. Simmonds.

SKYLARKS.—Prize, W. Walter. Very Highly Commended, J. Judd. Highly Commended, J. Judd; R. Mackley.

WOODLARK.—Prize, W. Walter. Very Highly Commended, J. Judd.

ROBINS.—Prize, C. C. Stockdale. Very Highly Commended, J. Crew. Highly Commended, C. C. Stockdale; J. Waller.

BLACKBIRDS.—Prize, R. Simpson. Very Highly Commended, Mrs. Dodd.

SONG THRUSHES.—Prize, Mrs. Dodd. Very Highly Commended, Mrs. Dodd; G. Page; R. Mackley. Highly Commended, J. La Touche.

THRUSHES OF ANY OTHER VARIETY.—Prize, E. Hawkins.

STARLINGS.—Prize, T. Gerlach.

MAGPIES.—Prize, W. Walter.

JACEDAWS.—Prize, W. Walter.

ANY OTHER VARIETY OF BRITISH BIRDS.—Prize, E. Hawkins (White-breasted Goldfinch). Very Highly Commended, E. Hawkins (Black Bullfinch). Highly Commended, T. P. Cuddon; H. Hanly; J. Pullen.

HYBRID OR MULE BIRDS, Any variety except Canaries.—First and Third, H. Hanly. Second, C. C. Stockdale.

BIRDS OF PASSAGE AND MIGRATORY BIRDS.

BLACKCAPS.—Prize, W. Bicknell.

NIGHTINGALES.—Prize, C. C. Stockdale. Highly Commended, J. Crew.

SISKIN OR ABERDEVINE.—Prize, J. Judd. Very Highly Commended, G. J. Barnesby; T. Gerlach. Highly Commended, W. Bicknell; E. Hawkins; T. Gerlach.

TITLARKS OR TREE PIPITS.—Prize, E. Hawkins. Highly Commended, J. Judd.

ANY OTHER VARIETY.—Prize, W. Bicknell (Gill Bunting). Highly Commended, E. Hawkins (Redpole).

FOREIGN BIRDS.

COCKATOOS, Any variety.—First, Mrs. Emm. Second, J. Judd (Rose-breasted). Highly Commended, Capt. Payne (Rose Cockatoo).

GREY PARROTS.—First, Mrs. Statham. Second, E. Hawkins. Very Highly Commended, J. Decaisne; J. Rose; J. Lingard.

GREEN PARROTS, or any other large variety except Grey.—First, W. W. Westbrook. Second, C. W. Wass. Third, J. Rose.

LOVE BIRDS, in pairs.—Prize, E. Hawkins.

AUSTRALIAN GRASS PARAKEETS, in pairs.—Prize, W. Barnes. Very Highly Commended, E. Hawkins; J. Rose; J. Waller.

PARAKEETS, Ring-necked or Bengal.—Prize, E. Hawkins.

PARROTS OR PARAKEETS, any other small variety.—Prize, E. Hawkins.

PARAKEETS, Rose Hill.—Prize, Capt. W. R. Payne, R.N. Very Highly Commended, E. Hawkins. Highly Commended, J. Judd.

PARAKEETS, Pennant's.—Prize, E. Hawkins. Highly Commended, J. Judd.

PARAKEETS, Blood-wing.—Prize, E. Hawkins. Highly Commended, J. Waller.

PARAKEETS, Yellow-winged.—Prize, E. Hawkins.

PARAKEETS, Red-rump (in pairs).—Prize, J. Judd.

COCKATEALS, in pairs.—Prize, J. Judd. Highly Commended, E. Hawkins.

DIAMOND SPARROW, Single.—Prize, A. Johnson.

CORAL-NECKED SPARROWS, in pairs.—Prize, J. Judd. Very Highly Commended, E. Hawkins.

JAVA SPARROWS, in pairs.—Prize, E. Hawkins. Very Highly Commended, E. Hawkins. Highly Commended, Miss Solomon.

INDIGO BLUE BIRDS.—Prize, J. Judd.

ZEBRA WAX-BILLS, in pairs.—Prize, A. Johnson. Highly Commended, J. Judd.

WAX-BILLS, any other variety, in pairs.—Prize, A. Johnson. Very Highly Commended, E. Hawkins. Highly Commended, A. Johnson.

VIRGINIA NIGHTINGALES.—Prize, C. C. Stockdale.

CARDINALS.—Prize, W. Walter. Very Highly Commended, E. Hawkins.

WHITEN BIRDS.—Prize, E. Hawkins.

FIREFINCHES.—Prize, E. Hawkins. Highly Commended, J. Judd.

FOREIGN BIRDS, any other variety.—First, A. Johnson. Equal First, J. Armeson. Highly Commended, E. Hawkins.

THE BEST GROUP OF FOREIGN BIRDS IN ONE CAGE OR AVIARY.—Prize, E. Hawkins.

JUDGES.—Canaries: Mr. T. Moore, Mr. A. Willmore.

British and Foreign Birds: Mr. W. Goodwin.

ON THE FIRST FLIGHT OF BEES IN SPRING.

[From the German of ADALBERT BRAUN.]

BY "A DEVONSHIRE BEE-KEEPER."

Hark! what is so gaily humming

In the little garden there?

Hark! what is so briskly whizzing

Through the still and silent air?

Friend, it is our bees—the darlings—

Now enliven'd by the spring;

Yes, the winter is departed,

And once more they're on the wing.

Happy he, who winter's perils

All his stocks brings safely through;

Thank Him, of all good the Giver—

Faithful Watchman He, and true.

Of my own are none departed,

All as yet unhurt remain;

Though no longer rich in honey,

Yet is spring returned again!

Come, and let us view them nearer—

Enter by the garden gate;—

So—stand-still and watch their doings—

Light your pipe, and patient wait.

See how busily they traverse

To their pasturage and back,

That they may by toil unwearied

Save the commonwealth from wreck.

Look, O look, what loads of pollen,

Bring they in with heedful care.

Nurslings, fear not; for your cravings

Here's sufficient and to spare.

How they dart and how they hurtle

Through the genial balmy air!

To the mountains—to the meadows—

'Tis the scent attracts them there!

There they dexterously rifle

Nectar from each flow'r in bloom.

Toil they for our honey harvest,

For us fill the honey-room.

Yes, our bees, our darling darlings,

We salute you all to-day;

For your life is our enjoyment—

Winter's sleep has pass'd away,

Grant prosperity, O Heaven!

To the new-born honey-year—

Give thy favour—give thy blessing—

To these objects of our care.

Now let each attentive gardian

In devoted service strive

For the proud, the matron-monarch—

Sov'reign of the honey-hive.

So that we may learn by watching

Who that in the noon-tide glance,

Or in midnight's darkest moments,

Summon her to Hymen's dance.*

Ev'ry bee-hive calls for patience,

Whilst great HALLER's lessons teach

Without patience Nature's secrets

None successfully can reach.

—T. W. WOODBURY, Mount Radford, Exeter.

* This point cannot now be considered doubtful, but it must be remembered that Herr Braun's verses were written seventeen years ago.

PROFITLESS BEES.

My Journals of this week and last have greatly interested me—Mr. Lowe last week, Mr. Woodbury this; also "T.'s" experience is such a parallel with mine and that of hundreds of others, that additional remarks on these subjects must be greatly valued by all classes of apiarians.

Now, as to my former complaint of the gradual decrease of bees from their hives. From all I can gather this does arise from the want of fertility in the queen, either from age or otherwise. Now, it is a well-known fact that the kind of food taken by the female of all animals greatly influences her productive powers; this is seen conspicuously in the common fowl.

I have always administered to my bees in autumn a liberal supply of syrup made of loaf sugar and water. Think you this artificial food is in any way injurious to the queen's productive powers? Fearing this might be the case I have fed with honey, dearly purchased, this autumn; but I determined to have one more good trial.

As to their unprofitableness. It appears to me there are three requisites absolutely necessary to insure success—First, fertility in the queen; second, suitable pasturage; third, favourable weather. The absence of either of these, in whatever hive the bees may be located, will be sure to cause a failure; for although the queen may be very fertile, with good pasturage combined, yet if the weather be bad there will be no collection; neither if the weather be ever so fine and the queen very fertile, if there be no pasturage within reach there can be no collection; or if the pasturage be good, joined with good weather, yet if the queen be not fertile then there will be no collection. Of course it is out of the power of any apiarian to affect either pasturage or weather; but to keep a succession of fertile queens is, I certainly think, as possible to an intelligent bee-keeper as it is to a farmer to keep good stock of any of our domestic animals; but the way to do this is the difficulty. The recent remarks in the Journal of Dzierzon and "A DEVONSHIRE BEE-KEEPER," on this subject, have I think been conflicting; I, therefore, beg the particular attention of our intelligent correspondents to this one point, and their early remarks will oblige and gratify your readers.

Before I conclude my note let me remark as to pasturage. Very much must depend upon its distance from the apiary; and the question, so often put and never answered, constantly recurs, How far does the bee fly in search of honey? Many have remarked upon it, the indefatigable Huber, Huish, and others, but their observations do not agree. I sincerely hope if any of your correspondents have any facts on this subject they will give them to the world through your Journal. For these two questions—First, How to secure a fertile queen; second, the probable distance of the flight of the bees—concern every bee-keeper on the face of the earth; for the latter will inform us if our situation is suitable, and the former in that case will teach us how to insure success.—E. FAIRBROTHER, *Woolwich*.

[Feeding bees in autumn on sugar and water alone in no way affects the reproductive powers of the queen. We shall be glad of the opinions of our correspondents on the other questions mooted in the foregoing communication.]

"TRUTH" AND THE BOTTLE.

I AM so glad to find that Truth is still on the earth, for, from the legend reported about her a short time ago, I very much feared she had become entirely disgusted with mankind. The *Times* gave the history, but as I have not the original printed words by me, I will merely write my own impressions of them, in order to reveal my joy at learning that Truth is still bravely amongst us above ground.

Well, poor Truth feeling herself very cold and uncomfortable at the bottom of her well, resolved one fine day to resort for an airing amongst the green budding bushes, and enjoy the warblings of the robins and hedge sparrows, the warm banks where the violets and the primroses bloom; and went sauntering about the beautiful meadows, where the sunbeams and the young lambs played, which so invigorated and emboldened her, that she determined to try the villages and small country towns. Poor Truth fared but badly there, she was laughed at, flouted, and insulted, and found it such hard lines to exist amongst the grandest bipeds of Nature's workmanship, that she determined to return to her well again. When lo! sitting upon the brink of the subaqueous habitation, she encountered a fine lady dressed all in the extreme of the

fashion, who exclaimed, "Dear Truth, don't run away or feel alarmed, my name is Fiction. But, darling, wherever have you been? How could you think of going about in that state? There, now, cool your eyes and temples with some of this eau de cologne, and let us commune a little together. But, first, tell me what has happened?" "Well, I can go about freely enough," replied Fiction. "In fact, I have been, and gone, and rather overdone it, and feel quite blasé! Look here, darling, this is crinoline. There, come now, do not run away again, nor seem so frightened, for there is no fire here, and I have a great mind to discard it; and then the immense width of the skirts of my dress will make two nice garments for us, darling, and enable us both to go into society more comfortably."

At this consummation so devoutly to be wished, your distinguished neighbour and contemporary took up the other thread of his article, and left THE JOURNAL OF HORTICULTURE of the 3rd inst. to inform us, that Truth, as I must reasonably suppose, agreed to the compact, and remains on *terra firma*. When "TRUTH" comes this way I invite a call, for I have some very good home-made of last year's vintage, the discussion of a bottle of which I feel almost sure would cause an exclamation, "Truth is in the bottom of a bottle!"

As to the "Bottle Bee-feeder," I would not tap the tops of my hives to apply it at this time of year on any account. My practice is to retain the temperature, and the tops of the hives quite undisturbed at this early breeding season. Besides, the "bottle-feeder" has been so well pushed and recommended by far superior authorities in the matter than I can hope to become. I never said one wilful word in disparagement of the article, and I do not doubt its capabilities. I would use it after what has been said in its favour with pleasure and confidence; but I like to see my bees partaking of their autumn banquet when it is necessary to feed them.

"TRUTH'S" "zinc feeders of every description," as far as I am concerned, resolve themselves into one simple contrivance, by which I am now supplying my bees with food through the entrances of the hives, and they partake of it, I am happy to say, with infinite gusto.

Ah! I am sorry to inform your estimable "DEVONSHIRE BEE-KEEPER," that we have no flowers open here yet for early pollen-gathering; but my bees are every day out and abroad. They are in excellent health, and shine like French-polished mahogany.—UPWARDS AND ONWARDS.

EARLY POLLEN-GATHERING.—For the last few days the bees in this neighbourhood have been as active as they frequently are two months later in the season. As early as January 27th, I perceived pollen-gathering to be general, there being abundance of flowers, and especially crocuses, now in bloom here. This is earlier than in any season of my experience. I perceive that "A DEVONSHIRE BEE-KEEPER" has made similar observations, but Lincolnshire is at least a fortnight behind Devon in point of climate.—G. F. B., *Spalding*.

OUR LETTER BOX.

INCUBATOR (W. B. J.).—In our No. 321 is a drawing and notes on the management of an incubator. The temperature to be maintained is 104° or 105°. We know of no work now on the subject that can be had except occasionally at second-hand booksellers. Minessi and Cantello printed pamphlets relative to their incubators.

GAME BANTAM'S LEGS (Bantam).—A white-legged Bantam cock must not be shown with willow-legged hens. If they were the best birds in the world non-matching legs would disqualify them.

SORA'S POULTRY ESTABLISHMENT (W.).—We do not know the distance of Mr. De Sora's establishment from Paris. The system has never been tried in England. It has been successfully carried on in Germany by the Prince of Tours and Taxis.

SILVER-PENCILLED HAMBURGH'S FEATHERS (A. Walker).—The brown feathers in a Silver-pencilled Hamburg are not desirable for exhibition. They are generally found on birds that are excellent for stock; as they are proved to be associated with bright, dark, and sharp pencillings. This and the creamy tinge are disadvantages in competition, but not disqualifications.

WHITE CRESTS OF POLANDS (Constant Subscriber).—Much of the dirt of which you complain on your Poland's crests is the result of the long-continued wet, which has made every place muddy. The only plan to avoid this annoyance is to put an india-rubber band round them about half an inch from the head; but we think when the weather clears up you will have no cause to do so.

MULE CAGE BIRDS (J. W.).—We do not think that you will be successful in breeding mule birds by turning Goldfinches and Canaries into a spare room as you propose. We would recommend that they be kept in pairs in separate cages. The Goldfinch should be the male bird; and to make success more probable the Goldfinch should be brought up from the nest in company with Canaries, or be kept in a cage about twelve months, so as to be somewhat tame. They should be treated in the same manner as Canaries when breeding.

WEEKLY CALENDAR.

Day of Mnth	Day of Week	FEBRUARY 17-23, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.		Sun Sets.		Moon Rises and Sets		Moon's Age.	Clock before Sun.		Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	m.	h.	m.	h.	m.	h.		m.	s.	
17	Tu	SHROVE TUESDAY.	29.475-29.379	48-38	E.	.14	13	af 7	15	af 5	26	m 6	29	14	17	48
18	W	LENT BEGINS. ASH WEDNESDAY.	29.364-29.270	53-39	S.W.	.02	11	7	17	5	sets		14	12		49
19	Th	Yew flowers.	29.543-29.419	55-44	S.E.	-.09	9	7	19	5	36	a 7	1	14	7	50
20	F	Cultfoot flowers.	29.645-29.467	58-29	S.	.06	7	7	21	5	53	8	2	14	1	51
21	S	Sun's declin. 10° 37' s.	29.914-29.782	58-39	S.E.	—	5	7	23	5	8	10	3	13	54	52
22	SUN	1 SUNDAY IN LENT.	29.819-29.659	56-40	S.E.	-.01	3	7	25	5	21	11	4	13	47	53
23	M	Cæsalpinus died 1603. B.	30.098-30.040	51-34	E.	—	1	7	26	5	morn.		5	13	39	54

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 45.8° and 32.5° respectively. The greatest heat, 58°, occurred on the 21st, in 1846; and the lowest cold, 2°, on the 17th, in 1855. During the period 148 days were fine, and on 104 rain fell.

MEMOIR OF THE REAL "LAWRIE TODD."



T was somewhere about the year 1833 or 1834, that we met in the quadrangle of Edinburgh University a wee wee man, about 4 feet 10 inches high, clothed in very very long garments, the skirts of which reached to his ankles, and with a very low-crowned and very broad-brimmed hat upon his head. His feet,

like the brim of his hat, were out of all proportion to his body, for they were very large and very long; but beneath that broad brim there shone a beaming countenance, full of intelligence, benignity, and playful humour. It needed not to have his name announced, for the world had been made familiar with his portrait through "Fraser's Magazine," and we had no difficulty in at once recognising the living image of GRANT THORBURN.

Our woodcut is a faithful portrait of that original, and we learned that he was the model from whom Galt sketched his "Lawrie Todd." That sketch by no means pleased the model; it contained, he says, "scraps and mutilated extracts" of his history, and, as he proceeds, "I have always found that whatever business was laid to my hand, was best done when I attended to it myself;" therefore, "I think I owe it to myself to state the simple truth;" and we owe Grant Thorburn no merely customary thanks for having paid that which he considered a debt due to himself, for he has left more than one most amusing and most instructive record how he, an emigrant nailer, "landed on Gouverneur's Wharf, New York, with only three cents in his pocket, and his nail-hammer in his hand, and rose to have a seedsman's establishment the most extensive in America." This "suggests the inquiry, How was it brought about?" We will endeavour to show in his own words.

"I was born in Dalkeith on the 18th of February, 1773. My father was poor (some are cursed with rich fathers), honest, and industrious, and by trade a nail-maker. He was a very strict Scotch Presbyterian, a Covenanter, and, like his neighbour and prototype, Davie the father of Jeannie Deans, an honest man. Our cottage stood within two miles of Davie Deans's farm, within three of the Laird of Dumbiedike's mansion," immortalised in the "Heart of Mid-Lothian."

Passing over the incidents of his youth, and as he verged upon manhood, he relates—"In the year 1792, when the French Revolution had fairly commenced, and the pulpit and press were teeming with Reform, I joined the Societies of what were then called 'The Friends of the People,' and in London were termed 'The Corresponding Societies,' whose ostensible motive was to obtain the reform of parliament by a more equal representation; and in the winter of 1793, with seventeen more

of the members of the said Society in Dalkeith, I was marched a prisoner into Edinburgh. We entered the town marshalled two and two through a concourse of people, one woman among whom, when she saw me bringing up the rear rank, exclaimed in her broad Scottish dialect, 'The Losh presarve us! if the king be afraid of sic a little fellow as that, I dinna ken what will become o' him!'"

"The little fellow" was examined and discharged by the magistrates; but either he feared he might be led into overt acts for reform, or he was resolved to live where there was no king to fear or make afraid—at all events he sailed for New York with his brother in 1794. When they arrived they could not land on account of the expense of living on shore, for they had but six and a half cents between them. So says our hero, "My brother and I sat down on the deck, his feet against my feet, and a wooden-bowl of potatoes between our legs, and began to scrape the skins off from the potatoes. Whilst thus employed a hardware merchant came on board, and asked if there were any nail-makers? I caught the word, and answered I was one. He was a tall man, and looking down on me, inquired, with a tone of surprise, 'Can you make nails?' I answered quickly, 'I would wager sixpence (all I had) I would make more nails in a day than any man in the country.'" Thorburn knew he could make 3320 nails between 6 A.M. and 9 P.M., so he was tolerably sure of a triumph.

Thorburn and his brother were hired; they were industrious, obliging, God-fearing young men, so they were respected and prospered; but we must pass on to 1802, when he thus proceeds—"About this time the ladies of New York were beginning to show their taste for flowers; and in the fall of the year, when the plants wanted shifting, preparatory to being placed in the parlour, I was often asked (for he then kept a grocer's shop) for pots of a handsomer quality than the usual red earthenware. It came into my mind to paint some of my common flower-pots with green varnish paint. They sold fast, and to good advantage. In the April following I observed a man for the first time selling flower plants in the Fly Market. As I passed along I took a leaf, and rubbing it between my finger and thumb, asked him for its name. He answered, 'a Geranium.' This, as far as I recollect, was the first time I ever heard that there was a Geranium in the world."

Thorburn bought two of those Geraniums, sold them speedily in his "green-varnished pots," and soon found that it was a ready, profitable trade, and that the purchasers asked for seeds. This set him "thinking that if I could get seeds I would be able to sell them; but here lay the difficulty, as no one sold seeds in New York!" He soon arranged with the man "in the Fly Market" to stay at home and grow plants and seeds, whilst he, Thorburn, opened a shop and sold them. But war broke out; he attempted to grow seeds, failed, and in 1815 was released a whitewashed bankrupt, with a family to support, and but twelve dollars with which to begin life again.

"Lawrie Todd" was not the man to be cast down, for he through life strove to do what he ought to do, and one passage in his morning of life is a fair illustration of the whole until the shades of its night closed, so we will quote but one—

"One Sabbath morning some young men of our passengers called at my lodgings.

"Where are you going to-day?" said they.

"To church," said I.

"Oh!" said they, "let us go to Long Island, and take a stroll in the fields. Our health requires exercise after being so long on ship-board."

"You may go where you please," said I, "but I go to church. The last words my father spoke, as we parted on the shore of Scotland, were, 'Remember the Sabbath day!' I have not so soon forgotten his words."

"They went to the fields, I went to church; they spent a few shillings, I put a penny in the plate.* Some of them earned nine or ten dollars a-week; I only received five and a half. They would get a light waggon, drive off with some young ladies, spend five or six dollars, get caught in a thunder-shower—fine clothes and hats all spoiled—come home half-drunk, rise at eight o'clock on Monday morning with aching bones, sore heads, downcast looks, and guilty conscience. I went to church, rose at five o'clock on Monday morning with a sound head, bones and body refreshed and rested, entered the labours of the week with a clear head and quiet conscience. At the end of the year they had fine clothes, fine hats, and powdered heads, but I had a hundred hard dollars in the corner of my trunk. They, having lived fast, all died young; while I, in consequence of my regular living, have not been confined a day by sickness in fifty years."

In 1815, a friend having lent him 500 dollars, Thorburn again commenced business as a seedsman, and from that time his life was a long succession of prosperous and happy years.

The following example of his "Advertisement" in the public papers, is both characteristic and historic.

"In 1799 the subscriber commenced business with three pots of Geraniums, a monthly Rose, and 15 dollars' worth of seed. The seeds grew till they filled the whole continent—the Rose blossomed till it spread into a tree, and the little birds formed their nests under its branches. Presently there came forth a

* In accordance with a custom in the Scotch churches, where a plate is always placed at the door on the Sabbath to receive the free-will offerings of the congregation.

host of pretenders, boasting of what they could do; they did nothing. In 1818 appeared William Cobbett. This same Cobbett, in 1793-4-5, published the 'Porcupine's Gazette' in Philadelphia; its object was to prove to a demonstration that all republics were humbugs—that kings only had a divine right to reign—and that the Americans were a set of consummate rebels. The mob tore down his office, made "pie" of his types, and scattered his porcupine quills in their native air. He fled to England, returned to New York a full-blooded radical Democrat, and opened a seed-shop at 62, Fulton Street, where he sold ruta бага at one dollar per pound, and black pigs for ten dollars each. For a long space of time you could hear nothing in Wall or Exchange Streets, but Cobbett and his black pigs—Cobbett and his ruta бага. The consternation was similar to that at Frankfort, when the man rode through the streets with the long nose, and still the wonder grew whether the nose was a paper or a timber (wooden) nose. He vowed he would drive Thorburn from the boards with his black pigs and ruta бага, in less than six months. Before twelve he closed the concern, and again sailed for England. Naked he came into America, and naked he returned from thence; his whole goods and chattels (a few minor articles excepted) consisting only of ruta бага and smoked hams from the hind quarters of his black pigs; he shipped one case, however, which by some estimation was beyond all price—viz., a rough Albany deal board, formed into a square box, and in this box was deposited the profound skull and dry bones of the venerated Thomas Paine, author of "Common Sense," &c. Out of these bones Cobbett meant to have made political capital, but they were seized by the custom-house at London for duty, and sunk (if report speaks true) in the deep green sea.



Grant Thorburn

tical quacks in all countries and at all periods. It is but a few years since that our political jugglers turned the world upside down about Morgan, his dry bones and split skull; Louis Philippe, too, and his French radicals, must needs parade the bones of Buonaparte wherewith to make a bank political.

"But enough of this long preamble. It is only meant to let his friends know that Grant yet lives—his eye as clear, his head as sound, and his health as good as in 1801—and this being the first day of spring he is provided with the usual supply of goods

"From this subject it may be profitable to observe how similar are the movements of poli-

(as they say in Prarl Street) to accommodate his friends; and his being only a branch from the tree at 15, John Street, the seeds, on trial, will prove good. American and European flower-seeds just received. Bouquets prepared for the ladies in the neatest order. Catalogues gratis. Gentlemen supplied with gardeners, &c.—GRANT THORNBURN."

In 1833, on which occasion we saw him, he revisited his native land, and one of the most touching chapters in his journal, entitled "Men and Manners in Britain," is that in which he narrates a gathering at his native town of a select twenty-five, "the majority of them my school-fellows fifty years ago," and from whom he parted to meet no more, with "Auld Lang Syne." That volume was published in 1835, but the year previously had appeared his "Forty Years in America," which met with a very rapid sale, and lured him to repeat himself more than once; for his "Fifty Years' Reminiscences," published in 1845, and his "Life," in 1852, are only versions of his first literary production.

As we recorded last week, this exemplary man died in America last month, and within a few weeks of completing his ninetieth year.

THE ROYAL HORTICULTURAL SOCIETY.

THE annual Meeting of the Royal Horticultural Society was held at the rooms at South Kensington this day week. A report of the proceedings will be found in another portion of our present Number; but as our space is too limited to introduce the whole of the report of the Council, including the statement of accounts, we shall refer to them in the few observations we now intend to make. It has always been a great disadvantage that the Reports of the Council could not be procured till the Fellows entered the room on the morning of the Meeting, and only a few minutes before the chair was taken. It was utterly impossible for any one during that brief space to make himself sufficiently master of the financial statements so as to qualify him for making any observations on the upward or downward progress of the Society; and several of the Fellows at this Meeting feeling this, it was very properly resolved that in future the Reports be prepared a week before the day of meeting, and that any of the Fellows may be furnished with them on application.

Before the day of meeting vague rumours were afloat that the finances of the Society were again in a precarious condition, that notwithstanding the large amount which had been received during a season which for length and splendour few may live to see the like again, all was spent, and that the Society would have to raise money on loan to enable it to carry on even for the present year. We were, however, pleased to hear from the Chairman that although "the Council would be glad if anybody would advance them some money, for he had no doubt they could spend it; still, so far from requiring to borrow, they had £6000 or £7000 in hand." This, doubtless, was a more cheering statement than the one which we had heard; but, cheering as it might have appeared to the Meeting, the impression it made on our mind was one of blank disappointment. It appeared by the statement that the receipts on Revenue Account had been £31,059 6s. 1d., and on Capital Account £17,021 14s. 3d., making in all £48,081 0s. 4d.; and we certainly expected to have heard that the Society had at their credit a sum beyond comparison greater than that stated by the Chairman. Twelve months ago we were told that the Society had nearly £16,000 of invested capital, and we had been living in the fond delusion that this was still safe in India debentures or other equally safe security; but when we are told that not only this and the whole of the £31,000 Revenue have vanished with the exception of £6000 or £7000, we naturally feel a strong measure of disappointment.

The statement, however, seemed satisfactory to the Meeting, for then the subject dropped, and the business was mainly confined to the complimentary expressions towards the Council from Colonel Challoner and Mr. Bateman, and to those less complimentary from Mr. Carter Wood. These, however, are small matters in comparison to the more vital question of finance, which ought to form one of the leading subjects at such a meeting. It is one which has always been uppermost in the affairs of the Society; and as the Fellows have an opportunity only once a-year of meeting to discuss them, every facility ought to have been provided to enable them to do so.

The accounts appear to us to be very complicated. Last

year they were arranged under four heads; this year they form nine. Last year we had a statement of "Assets and Liabilities," this year we have none; but are obliged to wade through a maze of facts, figures, and cross entries to our great confusion and bewilderment.

After devoting a considerable amount of time, and no small application, we have endeavoured to do for our readers what the Council have failed to do for the Society; and have presented in the following statement what we conceive to be the actual condition of the finances. We have in fact prepared an account, showing the available assets and liabilities, with the view of finding out where the £6000 or £7000 are, which the Chairman stated were still at the disposal of the Society.

ASSETS.			LIABILITIES.		
	£	s. d.		£	s. d.
On capital account.....	7200	0 0	On capital account.....	241	14 1
Balance on private account.....	485	1 10	Balance against ditto.....	7871	19 5
Ditto on composition account.....	5469	6 8	On private account.....	1755	7 6
Ditto in hands of accountant.....	5	19 3	Balance on rent account.....	295	5 9
Ditto in hands of the superintendent.....	146	8 0	Balance.....	3141	9 0
	<u>£13,306</u>	<u>15 9</u>		<u>£13,306</u>	<u>15 9</u>
Balance in favour of the Society.....	3141	9 0			

Such, then, is what we conceive, after all the investigation we can give to the subject, to be the real state of the Society's finances; and that instead of between £6000 and £7000, there is but a trifle over £3000, out of an income of £48,000!

The next question that naturally follows is, Where has all the money gone? This we have not time nor space to enter upon at present, but next week we shall endeavour, if possible, to clear up this point also.

COUNTRY MEETINGS OF THE ROYAL HORTICULTURAL SOCIETY.

I AM quite pleased with the article in your impression, February 3rd, from the pen of Mr. Anderson with regard to the establishing of a horticultural society of a migratory character. His remarks are to the point; and I, for one, have no doubt such a society would be found to work well, either in connection with present local societies or by itself. Like all others it only wants a beginning.

Could not the present Royal Horticultural Society hold a meeting—say at York, in connection with the present year's fête held there, which your correspondent does not mention in his list, although I believe second only to the great shows in London, as the advertisement says, and very superior to many held under Royal auspices there? As a proof of this I may say that one of the London exhibitors, who invariably takes the lead in the open class for Pelargoniums, was signally defeated at York.—EBORACUM.

CULTIVATION OF GLOXINIAS.

WE admire some plants for their handsome foliage, others for the beauty and size of their flowers, and some for their graceful habits of growth; but when we find these three good properties combined in a great measure in the Gloxinia, we are rather surprised that it is not more generally appreciated and cultivated. Its fine, rich, trumpet-like flowers—either of distinct colours, white, crimson, blue, purple, or pink, striped, mottled, edged, or blotched with carmine, blue, bright rose, and blush—either rising boldly above or resting on its fine, rich, velvety large, and beautifully-veined foliage—give to the whole plant when properly managed, a fine, massive, and graceful appearance, like a bouquet handsomely and artistically arranged.

Although Gloxinias generally receive the same treatment as other tropical plants, and at Kew they succeed admirably in a stove temperature, nevertheless, amateurs and others who have a warm greenhouse and a frame heated by dung can grow them to as great perfection as where they are allowed a higher temperature.

Sow the seeds in pots of light sandy peat in February; fill the pots half full of crocks, over which place a layer of moss and

peat, after which sift a little peat and sand very fine, distributing the seed evenly thereon. It requires no covering with soil. Water with a very fine rose, cover with a bell-glass, and plunge the pots in bottom heat. In ten days or a fortnight the plants will appear. Give air by degrees. When they have formed three or four leaves transplant them into 60-sized pots; and if properly supplied with heat and moisture the plants will bloom in the autumn of the same year. They should not be dried-off until the second year, as the small fibres are not sufficiently strong to cause them to start vigorously in spring. This remark is also applicable to young plants raised from cuttings.

The stock can be readily increased, as almost every part of the leaves will form plants if a portion of the midrib be retained in each cutting. Divide the leaves transversely, place them in pots of fine sand, cover with a bell-glass, and plunge in a strong heat; in a short time callosities will form at the base of the cuttings. Repot in good sandy peat, replunging and covering with a hand-glass, giving air occasionally. If the plants to be propagated are very choice, remove them into a large pot, making incisions on the midrib of the lower leaves, placing a few pebbles on the leaves to keep them to the soil: this is the safest method. They will soon root if a good heat is maintained, and may be repotted immediately.

February or the beginning of March is the best time for starting the old plants after their winter rest. In potting, the old soil should be carefully removed from the roots. In planting, press the roots gently on the surface of the soil, and give them no water for some time. The soil should consist of half peat, one-fourth loam, and one-fourth leaf mould, mixed well together, and used in a moderately rough state. A thorough-good drainage of potsherds is indispensably necessary. As they progress in growth and fill their pots with roots they are to be liberally shifted, not exactly on the one-shift system, but approximating to it—that is, from a 48-sized pot to a 24, and ultimately to a 16, where they will attain a size, luxuriance of growth, and profusion of flowers suitable for exhibition at our horticultural shows or for adorning the conservatory. The soil should be gradually enriched with some well-rotted dung until they receive their last shift in which they are to bloom, when more loam with less peat and a liberal addition of rotten dung may be given, the soil being used in a rough state.

After they are all potted remove them to a frame where the temperature is about 60°, and when they have commenced growing give them a little water, increasing the quantity as they advance in growth. A little air must be given in fine weather. During their season of blooming a watering with weak liquid manure (sheeps', pigeons', fowls' dung, or guano) may be given occasionally, which will increase the luxuriance of the foliage and the brilliancy of the flowers. When done blooming watering to be gradually discontinued, and at last entirely dispensed with, when they should be removed to any out-of-the-way shelf in a warm greenhouse for two or three months until February, when the season for a fresh growth arrives. *Gloxinia caulescens*, which is unlike any of the others in habit and manner of growth, with a few other species continue in a growing state all the winter.

The following are good sorts:—

Alba grandiflora.—Pure white.

Argyrostigma splendens.—Deep purple, with white throat, and foliage beautifully striped.

Anonyma.—Blue lobes, margined with lavender; white mouth and throat, spotted at the base.

Aeme.—Blue lobes, edged and prettily marked with white; violet throat.

Baronne de Vrière.—Mottled lilac.

Beauty.—Pink lobes; pure white mouth and throat.

Brilliant.—Bright crimson, the lobes margined with rose; rich violet throat.

Carminata splendens.—Fine rich crimson, large flower.

Celestial.—Rose lobes; throat encircled with deep violet; base of the tube white spotted with brown.

Cupid.—Light blue lobes with white markings; pure white throat.

Daphne.—Pink, edged with white.

Fairy.—White tube and lobes; the mouth peculiarly encircled with violet crimson.

Favourite.—Bright rose, shaded with crimson; throat encircled with violet; white tube.

Godfrey de Bouillon.—Fine blue.

Grandis.—Blush, with carmine throat.

Maria Van Houtte.—White and carmine.

Lauretta.—Blue, marbled with white.

Model.—White, tube pink shaded with violet.

Madame Malibran.—Bright rose.

Napoleon.—Carmine red and white.

Princess Alexandra.—White lobes, margined with blue.

Princess Beatrice.—Blue, each lobe spotted with violet; pure white throat.

Petioniana.—White, with crimson throat.

Spectabilis.—Purple.

Victoria Regina.—Lilac blush, with intense purple throat.

Virginie.—Blush, under lobes bright crimson; violet throat.

W. KEANE.

A FEW DAYS IN IRELAND.

CARTON.

(Concluded from page 118.)

BUT though the scenery in front of the mansion is richly picturesque rather than bold and striking, there is no want of the wild and romantic at Carton, and especially at the glen through which winds the river Vye. Through the natural and art-enhanced attractions of that glen, Mr. Hamilton, of Ham Wood, drove us to Carton. Now the noise of the little river is heard trattling with some huge boulders, and then its quiet murmur as it passes over a pebbled bed; now it is lost amid overhanging masses of foliage, or dimly discernible amid long reaches of bullrushes; and anon it comes before us as a quiet pool, reflecting like a mirror the surrounding scenery. The banks, and especially the right-side one, along which we pass are equally diversified. Here are steep craggy rocks with the clefts of their faces relieved with lichens, mosses, *Ceterach officinarum*, and *Asplenium Ruta-muraria* and *trichomanes*—there are lofty mounds, with luxuriant timber, and trailing Ivy, and Ferns disputing for the undergrowth, with some favoured young Conifers standing in a conspicuous position. Anon we come to mounds composed, seemingly, of decayed rocks and wasting wood, covered with large breadths of the common Polypod, or relieved with masses of the *Blechnum boreale*, or fields of *Scolopendrium*; and then again and again, and varying with these, on steep banks and mantling over precipices, no end of *Cistus*, *Hypericum*, and *Helianthemum*, &c., all testifying that here the earnest enthusiasm and the correct judgment of the late Duchess are as manifest as in the other parts of the demesne. Before we have time to weary we come in front of a deep cascade, and on its other side are delighted with one of the most beautiful of artificial lakes.

Crossing above the cascade to the opposite bank, we pass through embowering trees to the cottage and cottage garden. Here we found fine specimens on the lawn of deciduous and evergreen trees, but something of the idea of rusticity was maintained throughout. We cannot be sure of the size of the large flower garden, but its striking characteristics were twofold. First, circular arches for climbers, with rich wreathed festoons going to a good height at the centre. Then secondly, though there were plenty of *Calceolarias*, *Geraniums*, and such Crystal Palace Dahlias as for height and fulness of bloom we have scarcely ever seen equalled, the grand features were beds of *Pentstemons*, *Fuchsias*, *Phloxes*, *Asters*, *Antirrhinums*, &c., in the good old flower-garden style. Another very attractive though somewhat sad subject was the fine old man, the gardener, Mr. Abercrombie, packed in a large easy chair on wheels, basking in the sun and taking cognisance of the work, as from rheumatism and paralysis he had long been unable to walk. Long may he reign in his little province under such kind and generous sovereignty.

Several pits and frames out of sight supply the plants for this garden, and five men are regularly employed to keep it and the lawn, &c., round it in order. The cottage, chiefly in the Swiss style, is for the residence of the gardener, and a portion is set apart for the family and their friends. The dry rot had attacked the wood, and the whole was undergoing repair, the roof being renewed by an outside covering of small rounded tiles of a dull colour so as not to interfere with the general outline. On entering the large reception-room one felt as if carried by an enchanter to revel amid the gorgeous beauties of fairyland. The whole of the arched and ribbed roof and walls (unless where there was a mirror to reflect the beauties and enhance the dimensions), was covered by shells of every imaginable size, form, and colour. The beautiful arrangements, the exquisite designs, and the contrasts, the blending and shading of colours, must be seen to be

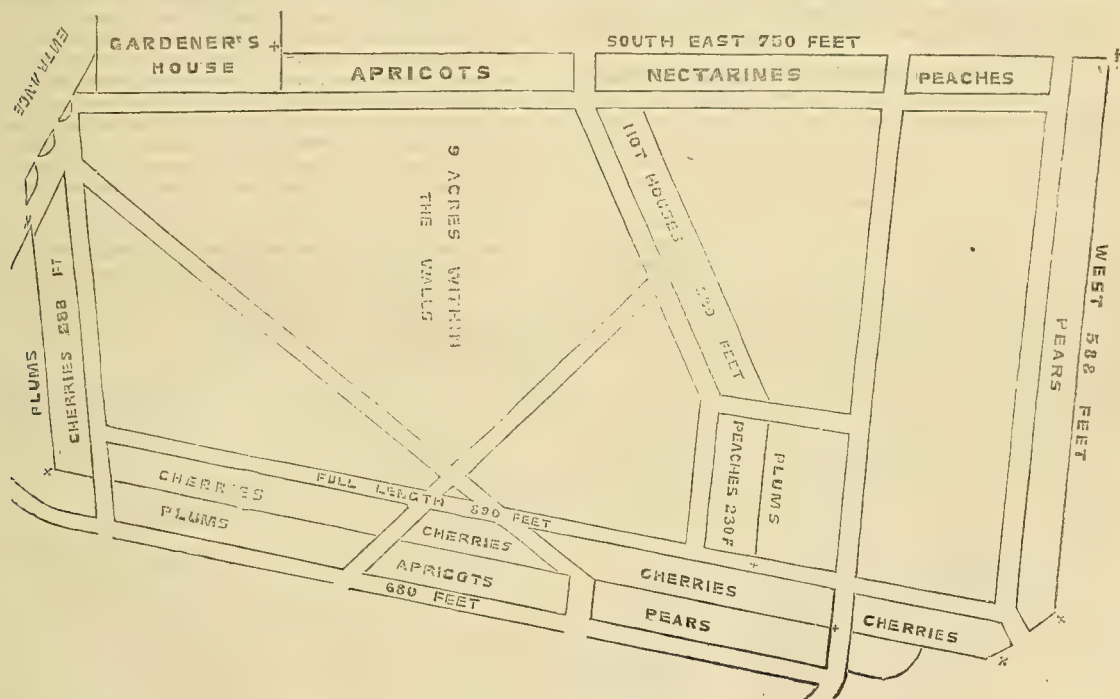
appreciated. We forgot how very long a time was required to finish this work. It remains a monument of the artistic and refined taste of the late Duchess, who, we were informed, planned all the arrangements and had every arch and panel fitted on the table, or the floor, before the shells were fixed into their places. Delightful as were the effects under a shaded light during the day, it must be still more dazzling under a strong light at night. In our boyish days we have experienced ecstatic delight, lolling on a hedgebank and reading the poems of Ossian; but no such hall as this could ever have been imagined by the warrior poet in which to hold the feast of shells.

We can well understand the interest that the noble Duke takes in this lovely spot, even from the force of past associations. Here we met and were introduced to him as he was superintending these repairs, and carrying an axe and a saw over his shoulder in regular woodman carpenter-fashion, and no doubt owing much of the hale vigour he possesses to such exercise and employment in the open air. Like other Irish gentlemen he playfully quizzed us about the barbarism of Ireland; and most kindly alluded to signs of improvement, and his hopes of still greater advancement when ignorance and prejudice should be more removed. If we have helped at all to give a better idea of what is doing in Ireland, these papers will not have been written in vain. Much of the success of the Duke in effecting improvements and inducing others to imitate his example we should be inclined to ascribe to his large-hearted kindness and courtesy. In converse you are so apt to forget the dignity, and to esteem

the man, that ever and anon the rough doric but expressive lines of Burns respecting Lord Daer come tilting over the memory—

"The fient a pride, nae pride had he,
Nor sauce, nor state, that I could see,
Mair than an honest ploughman."

In returning, and crossing the bridge at the cascade, we must notice two things. First, the strong, almost violent, contrast between the river below and the noble lake above, the first in its natural state and well supplied with weeds and rushes, but in unison with the character of the glen; the second, in its bright silver sheen without a weed or a rush on its bosom to mar the rich picturesque effect of its lawn and wooded banks and islands. Again: We have rather an imperfect recollection of the bridge, but the impression left on our mind is, that it is more in character with the glen than the massive splendour of the lake. The lovers of strong contrasts would prefer matters as they are. The lovers of the harmonious would prefer a dash of uniformity between the river immediately below and the lake above the cascade which dams back the water. There are five islands on the lake, one of which is called the Prince of Wales's Island, from being finished on the day on which he was born, and a Wellingtonia was planted on it by His Royal Highness on his visit to Carton in the summer of 1861. We should roughly estimate the size of the lake to be about sixty acres. The last improvements cost above £2000. The purity of the water and freedom from weeds are secured by firmly macadamising and grouting the bottom of the lake, and, in addition, forming an



PLAN OF KITCHEN GARDEN AT CARTON.

open culvert deeper along its centre, by means of which any mud, &c., that may accumulate can be removed.

Leaving this fine lake, we cross the park as a near cut to the kitchen garden, which contains nine acres within the walls. Instead of a description we will merely mention a few prominent points. First, there is a large commodious gardener's house close to the main entrance, looking very picturesque with its walls covered with Jasmines, Roses, and Honeysuckles. As a general rule, gardeners' houses are much more comfortable and suitable in Ireland and Scotland than they are in England. There have, of late, been many worthy exceptions, but it is too true that many gardeners' residences are still little better than sheds. In other cases, in addition to inconvenience and want of room, the house is often a mile or more from the garden, and very likely no young man kept on the premises, and yet forcing must be attended to. Can we really have any sympathy with gentlemen when they complain of their coal bill in such circumstances? Could any reasonable man find fault with us if

we adopted means which would prevent the necessity of watching the changes in the sky, and after the labours of the day trotting between house and garden and house for the best part of the evening? The true remedy is to enable a gardener to take his lantern and examine the condition of his houses in a few minutes.

Secondly, fine massive gates admit to the main entrance, with a walk to the right, and a walk to the left, and a walk in a diagonal line right before you. These diagonal walks, as in the case of Lough Crew, take away the sameness of square quarters, though, perhaps, lessening simplicity in the modes of cultivation. These walks, like those in the pleasure ground, were examples of cleanliness; and by the sides of the main ones low rows of flowers were grown. We noticed the best rows of *Nemophila insignis* we ever saw in the autumn, by itself, and also mixed with *Mignonette*.

Thirdly, vegetables for the coming winter seemed to be abundant, and fruit trees looked healthy and well stored with buds.

Fourthly, the walls were of great extent—3974 feet in length, and 14 feet in height. The trees, and especially the younger ones, were in excellent condition; and each kind of tree, as Peach, Apricot, Cherry, Plum, Pear, &c., was kept to its appropriate wall—thus, in addition to other advantages, securing more variety than any mere mixture could accomplish.

Fifthly, most of the walls were in excellent order, but others were showing signs of rottenness and decay. These were all being thoroughly repaired; and to enable the work to be properly done men were taking up large Pear trees, pruning the roots, and covering them over until the wall was ready to receive them. Lengths of wall so managed in 1860 were looking beautiful in 1861, after being replanted in fresh soil. Several more borders and walls have since been done in the same way, and younger trees becoming too rampant have also been lifted and replanted.

Sixthly, besides a large house, &c., in the Melon-ground, the main range of houses is 320 feet in length, 14 feet in width, and 14 feet in height at the back. Neatness and order were everywhere apparent, with neat paths near the back of the vinerias. The range is divided into four vinerias each 26 feet long, four Peach-houses ditto, and a Fig-house and conservatory in the centre. The wood in all the earlier houses was ripening well, and in the late vinerias there was just too heavy a crop. The Vines had been given to shanking, but were cured, though old plants, by lifting and replanting in fresh soil. The vinerias, Fig-house, and conservatory, and houses in Melon ground, were most efficiently heated a few years ago from one boiler by Mr. Meredith, Garston, Liverpool. The Peach-houses are still chiefly managed by flues.

Lastly, though in the vinerias and in the regular plant-house there were many of the more common and fashionable plants nicely grown, there seemed to be a want of that rarity and great variety in the way of collections which we would naturally associate with such a magnificent place. We also forget noticing much in the way of pits—those useful auxiliaries for forwarding early fruits, flowers, and vegetables, and which must be necessary to Mr. James even for securing plants for the flower garden, unless, like people in our small way, he turns his fruit-houses to such purposes in winter. We regret very much that, owing to a previous arrangement, we had so little of Mr. James's good company; as, had we laid him under contribution for a day, we might have told a more definite story about Carton instead of confining ourselves to its more salient points.

The home demesne consists of more than a thousand acres of rich fertile land, 50 of that being in meadow, 50 under crops, 520 in pasture, 314 in woods, and about 80 in water and roads. The whole is devoted to the keep of a large stud of horses, a splendid lot of milch cows, and a large stock of bullocks and sheep, to meet the supply needed for such a large establishment. A good number of horses and a large staff of men are constantly employed in carrying on improvements. On leaving Carton we could not help wishing that the noble owner might long remain to stimulate such industry and improvement, and that when, in the course of nature, he should be called home, there should be son, and sons, and sons to come, to inherit not only his honours and his dignities, but also that warm-hearted kindness, that strong faith, and firm hope which prevented him, even in the darkest times, from ever despairing of the future greatness and prosperity of the Emerald Isle. R. FISH.

THE ROYAL HORTICULTURAL SOCIETY'S ANNUAL MEETING.

THE Annual Meeting of this Society was held on Tuesday last, the 10th inst.; and in consequence of some unsatisfactory rumours which had been afloat for some days previously with regard to the Society's financial condition, it was looked forward to with some degree of uneasiness by those interested in the Society's welfare. The chair having been taken by Sir C. Wentworth Dilke, Bart., the first proceeding was to read the Report of the Council, upon which the Chairman invited discussion.

Colonel CHALLONER then rose and said—That as the present was, he believed, the only moment when the Fellows could address the Council he would make a few observations. He expressed great satisfaction at the way in which affairs had been carried on, and congratulated the Council on the success attending their exertions; at the same time it was impossible to bring forth arrangements to which exception might not be taken by

some. He, for one, objected to the day fixed for the inauguration of the Memorial of the Exhibition of 1851 (the 5th of June), that being in Ascot week, and, consequently, many would be unable to attend the ceremony who would desire to be present.

Then, he had been asked by a number of the oldest members of the Society, to make a request to the Council. These members felt that the character of the Society had not been raised but lowered by the adoption of 6d. admissions to the public, and, paying four guineas a-year, they had imagined they had some guarantee for the character of the company. They, therefore, wished for a more restricted admission of the public.

The next point was the gardens. Nothing could be better than the flat geometrical parterres, but those on the side of the sloping banks were contrary to all rules of landscape-gardening, and he would wish to see them removed. He concluded by observing that a vote of thanks to the Council would not be misplaced on account of their great attention to the interests of the Society.

Mr. J. CARTER WOOD then severely adverted to the bare and desolate appearance of the garden in winter, and the state of the arcades, which looked like brick sheds; and he thought that the members were entitled to expect the Council to give them a quiet and comfortable walk in winter, otherwise he considered the Society would not go on increasing.

In connection with this subject a letter from Dr. Cooper, containing suggestions for the improvement of the garden was read. It stated that the arcades were generally admitted to be in their present state unsightly, neither affording shelter in winter, nor shade in summer. It was, therefore, suggested that they be covered with glass, heated, and plants introduced, so as to form a winter promenade. This might be effected at a cost of £10,000. With regard to the conservatory, a marble fountain should be erected in the centre and two aviaries in the gallery, and tessellated pavement should be laid down. As to the garden, planting should be carried out, but that would be best left to Mr. Eyles.

Colonel WILSON said he did not agree with Colonel Challoner about visitors not being admitted for 6d., such admission enabling a vast number of persons to see the gardens who would not otherwise be able to do so; and he thought that the public might be admitted one day a-week on these terms with advantage to themselves and the Society. He congratulated the Council on the prosperous state of the Society.

Mr. H. G. BOHN was glad to find the gardens prosperous, and hoped that in future the Reports would be sent out a week or ten days before the Anniversary, as it was impossible to form an exact opinion of the balance-sheet when only received a quarter of an hour before the Meeting. He had heard that they had spent all their money, and that they would require to borrow to enable them to go on; he hoped the Chairman would inform the Meeting of the exact state of the finances.

Alderman COPELAND thought that, had it not been for the exhibitions which took up so much of the time and attention of the officers, the gardens would have been better; but even as it was everything was well done, and evinced activity and good management. With regard to converting the arcades into a winter garden, he did not see how the money was to be raised except by doubling the subscriptions.

The CHAIRMAN in replying to the various observations and suggestions which had been made said, that with reference to the day fixed for the uncovering of the Memorial (the 5th of June), there was a difficulty. That day was fixed upon as being the anniversary of the opening of the garden by the Prince Consort, the Exhibition of the Botanic Society was on the 3rd, the Society's own Shows were a week before and a week after, and he did not see how it could be bettered. If it had been wished, the highest personage in these realms would have uncovered it herself; but he felt—they all felt—that such a mournful task would be demanding too much of her fortitude of mind. He had to a certain extent been consulted in the matter, but he would endeavour to get the opinion of the Prince of Wales, still he had very little hope of a change in the day; nevertheless, he would consult those connected with His Royal Highness. He thought that the uncovering of the Memorial would be the first public occasion on which the future Princess of Wales would appear after her marriage.

Colonel Challoner had taken exception to the admission at 6d. In the present year there would be no 6d. or 1s. admission, the public would only be admitted on payment of 2s. 6d. He

thought it would take much time before the taste of the general public would be sufficiently advanced to require the admission to be reduced to 6d., especially when there were such attractions as Richmond Hill. But when all things were settled he thought one day a-week might be devoted to their admission at this price.

Then with reference to the parterres on the slopes, they have the advantage of looking bright in winter, but there are many points in Mr. Nesfield's plan which may be modified. He advocated the introduction of Lilacs, Laburnums, &c., into the gardens. A great mistake was made last year in the grounds being rendered beautiful at a time when the public could not enjoy them. With respect to the conservatory, of course a good deal could be done, but the cost was a consideration. He thought that a portion only of the parterres should be retained, as they required an enormous quantity of bedding plants to fill them.

With respect to the arcades, he thought not much could be done at present. Government proposed last year to take a considerable portion of the arcades, but for some reason the proposition fell to the ground. Negotiations, however, were going on, and he believed that some portion of the ground would be covered with public buildings; and, if so, something would be done with the remainder. He was inclined to vote for glazing the arcades, but not for heating them on account of the expense, and without heat many plants could be grown. Besides, the arcades were not the Society's under agreement, and though they could use them they could not pull them down or alter them without the consent of the Commissioners of 1851. He quite agreed as to the desirability of a fountain in the conservatory, but thought the latter was too small for one. He also acquiesced in the suggestion of tessellated pavement if the expense could be incurred, but that was the obstacle.

With regard to the finances, it was not true that the Society would require to borrow more money to carry on. If anybody would advance them a little money he had no doubt they could spend it, but they were not quite come to that pass yet; they had still £6000 or £7000 at command.

Two points still remained to be alluded to. The first was, that it was always contemplated to have a reading-room with books and periodicals, and it is proposed to fill the recesses in the Council-room with such and convert it into a reading-room, which shall be open every day except Sundays and *Jefe* days. The next was—that they could not separate without taking notice of the retirement of Dr. Lindley. He had worked for forty-one years in the interests of the Society in a way that few have strength to support, and the Council had come to the decision that a portrait of him should be taken at their own charge, as it was they who had been most in contact with him, and they alone knew the enormous amount of work he had had to go through.

Colonel CHALLONER here called attention to "that tent—that horrible tent," which had been remarked upon by many, and he asked if an alteration could not be made.

The CHAIRMAN in reply said—That half of those whose opinions were taken were in favour of the colonnades, and the other half in favour of tents. The one party alleged the superior dryness of the arcades, the other that plants never look so well as under tents. The tents last year were on too large a scale, and though erected in a sheltered spot one came down. Practical men were quite unanimous in favour of tents as being the most suitable, but if Government should take a portion of the arcades there would then, doubtless, be a permanent building.

Alderman COPELAND suggested on the part of the members that Dr. Lindley should be presented with a piece of plate.

Mr. BATEMAN bore willing testimony to the constant urbanity and assiduity with which Dr. Lindley discharged his duties, and thought something more should be done than the portrait.

Colonel WILSON moved that the Council be requested to adhere to the day fixed upon for uncovering the Memorial, and the motion was seconded by Mr. Bohn and carried.

The thanks of the Meeting were next unanimously voted to Dr. Lindley.

It was then moved by Mr. BOHN, and seconded by Colonel WILSON, that the annual report and ballot papers be circulated among the members a week previous to the Anniversary, and this motion was agreed to be carried out, as far as practicable, without a division.

The ballot for new members of the Council and officers for the ensuing year was then proceeded with, when Sir Daniel Cooper, Bart., the Rev. Joshua Dix, and J. Kelk, Esq., were

elected new members of Council in the room of Earl Somers, the Bishop of Winchester, and H. Pownall, Esq., who retire; William Wilson Saunders, Esq., Secretary, in room of Dr. Lindley; and J. Clutton Esq., Treasurer.

WEEDS ON GRAVEL WALKS.

YOUR correspondent "JARDINIER" should, if he has not already done so, try sulphuric acid solution upon these great disfigurements. I was very much troubled with weeds, and particularly that exceedingly annoying one, Couch, on my paths about two years ago, and tried both powdered salt and solutions of corrosive sublimate without much success. Either of these would certainly destroy Groundsel, and the small annual grasses, but against Couch, Dandelion, and Dock, they were powerless. My ground being a strong clay, mere hand-weeding was nearly useless, the longer roots breaking in the soil, and reappearing fresh and lively in a few weeks. I at last tried a solution of about a pint of acid in four gallons of water, and I had a complete victory over my enemies, the mixture appearing not only to destroy the tops of the weeds, but also to corrode the roots themselves. The common vitriol can be procured at any oilman's for 3d. a-pound, and probably for less, for a large quantity. I apply it (mixing it in a well-painted pail) with a small watering-pot, a slight sprinkling being quite sufficient for ordinary weeds. A weaker mixture than the above would kill Groundsel, &c. If the path hisses softly, the solution has sufficient acid. This mixture does not make the path "sodden" like salt. It should be put on in dry weather, or the rain will weaken its effect, besides washing it down to the edgings, where it may exercise its virtues undesirably. If this hint is of any use to your correspondent he is quite welcome to it from—LEX.

[Does not the acid injure boots and shoes that touch it?—EDS.]

MILDNESS OF THE SEASON.

It is generally acknowledged that the present winter has hitherto been an unusually mild one. In some localities, however, it appears to have been less so than in others. Cornwall has experienced sharper frosts than Kent; while, in the opposite corner of our triangular-shaped kingdom, Northumberland, I am told ice was 4 or 5 inches thick in November; and in some of the central counties frost, more or less severe, was also experienced at that time. Since then the two months we generally experience the greatest amount of cold in (December and January) have passed away with fewer frosty days, and those less intense, than we have often known in April; and up to the time I write (the 10th of February) it still continues mild. I speak of this district, Kent, where the sharpest frost we have had since the 23rd of November has only been 5°, the thermometer sinking to 27°.

It is almost needless to say that such an unusual period of mildness is of rare occurrence, and it is equally singular that vegetation should have made so little progress during that time. The buds of Gooseberries are but little in advance of what they usually are in ordinary winters, and the same is the case with other trees.

Herbaceous vegetation has, however, kept growing; fields of Turnips as well as grass fields showing the rich tender green of spring, and in gardens the Borecole and Cabbage tribe have had no check. Unfortunately, the latter may not have had sufficient to prevent its running to flower, which evil is likely to befall Celery a month before the usual time, and autumn-sown Peas are likely to be too vigorous to stand the cold that may possibly come yet.

In the flower garden the frost we had in November so far injured or killed most things that they were then removed; but I find some variegated Geraniums that were left in some rustic vases, in no way protected excepting by their own leaves, are alive and sprouting out afresh in their stems; and Calceolarias have grown considerably, both old plants left in the ground and the cuttings put into a cold frame in the latter end of October; the latter had grown so much that I was obliged a few days ago to thin them out, and put in another batch of cuttings in the same place, which I have no doubt will do pretty well.

I may add that some cuttings of Geraniums were put into a cold pit early in September to strike in order to be taken up

and kept in boxes and pans elsewhere during the winter, but they were not all wanted, and consequently were left to their fate in this cold pit, with nothing over them but a single light, and they almost touching the glass; yet the frost we had at that time, and the damp and neglect which followed, have not entirely killed them, as several are still alive and pushing out fresh leaves amongst the mass of dead and decaying ones by which they are surrounded. The pit is quite exposed, but their having abundance of air sideways, is, perhaps, the reason of their escaping the evil effects of so much damp weather; for, although we have not had many heavy rains in the last two months, my register records twenty rainy days in December and twenty-six in January, with little sun either month. In fact, the absence of sunshine these two months has been anything but favourable to the preservation of bedding Geraniums in the places they are usually kept; for, it being too mild to require fire heat, there was an unwillingness to burn fuel to no purpose, while at the same time there was not that dryness of atmosphere necessary to protect a tender half-rooted cutting from succumbing to the decaying influences by which it was surrounded. Other plants more able to withstand damp than fire heat have, of course, suffered less; and many Verbenas and such like that were left out of doors will doubtless produce cuttings that may be turned to account; but all ours were destroyed when they were no longer ornamental.

It would be easy to point out other instances of the mildness of the season, as Primroses having been in flower since September, and Fuchsias budding up to the tip ends of the last year's shoots; but anxieties are more directed towards the future. And if any confidence can be placed in predictions it is easy to find out what is said about the weather to come. Unfortunately the mistakes of the weather-prophets as to the past give us little confidence in their foretellings of the future.—J. ROBSON.

SELECTION OF SEEDS FOR A KITCHEN GARDEN.

IN a late Number of THE JOURNAL OF HORTICULTURE was given a list of vegetable seeds suitable for an ordinary kitchen garden. As regards quantity, this list gave just such a proportion of each kind of seed as I should choose for a kitchen garden of, say, an acre; but as regards the quality and selection something more is required, and on these points it is no easy matter to give any definite statement suitable for all localities and all kinds of soils. I have chiefly had to deal with small kitchen gardens, considerably less than an acre in extent, and of various kinds of soil, from a light loam to a stiff marl, and yet I have found that the quality or selection of seeds is of far less importance than the management of them, and the cultivation of the soil.

It will be seen from my former remarks, that I regard plenty of room as one of the most essential points in good culture. However small the space may be, let the quantity sown be small in proportion, so that when the plants grow the air may circulate about them, and the light shine on them from all parts, and they will not be drawn-up into making a superfluity of leaf and stalk, which wastes the energies of the plant in making growth which is not required by the cultivator.

I also regard moisture as most essential to vegetation during the period of growth, and where the soil is of such a nature that moisture quickly evaporates, endeavour either to prevent its doing so by mulching, or supply the loss abundantly from the water-pot. Beyond this, plants require sustenance, to be given in the form of manure, which should be in such a state that they can appropriate it at once. Again: The surface of the soil should be pulverised, and subjected to the action of the air as Nature intended it should be. I do not find in Nature any such thing as throwing up the ground to the surface from a depth of 3 or 4 feet, in order that plants may luxuriate in the soil thus thrown up. In this I think we are apt to steer too wide of what Nature teaches, and this applies more particularly to small gardens, where a larger amount of labour is given in proportion to what gardens of greater size receive. I think if these points were fully considered and acted upon, there would be little difference found in the result of the management of different kinds of soil; at least, I have found the difference not so great as many would have us believe.

With regard to the selection of seeds, I can confidently affirm, that report appears to me to exaggerate the qualities of

various sorts, and that what are spoken of as distinct varieties have turned out so nearly alike, that the difference has been imperceptible to the ordinary observer, and that more difference is found to result from different management, difference in the season, and like causes, than from any difference in the sorts. I have grown a dozen varieties assumed to be distinct, of late Broccoli, and found no more difference in them than if they all had come from the same packet; and every reader of THE JOURNAL OF HORTICULTURE must be aware of the number of names given to what have proved to be one and the same sort. But, then, we know there are sorts that really have a distinction, and this sometimes of a very wide nature; for instance, in the various sorts of Peas, where none would mistake the Emperor for the Scimitar, either in the seed, or in any stage of growth. The Potato and the Lettuce also offer similar distinctions. It is a gardener's duty to make himself properly acquainted with these distinctions and other points in the selection of seeds, so that he may be enabled to lay before his employer a list in every way suitable for a proper succession, adapted to the space, and also to some extent, if possible, to the nature of the ground.

I have seen much relative to the making of seed lists, and as a rule, I have observed that quantity is given the precedence, and that the selection is either a yearly repetition, or that such sorts are inserted as are most highly recommended in the catalogues; but the employers find no perceptible difference. Some particular crop may, it is true, come extra fine, and this more by chance than management, for it is tried again the next season with a very different result. I have been in the habit for years past of making out a fresh list every season, and have tried such sort of Peas, &c., as are reported of superior quality; but I have also found that suitable treatment is necessary to bring out those superior qualities, and what that treatment is will be apparent to any observer. It is no use trying to evade the fact, that to bring out the good qualities of any plant, it must be in the hands of one who understands how to do so, and is willing to apply the means.

A seed list such as I should make out for half an acre of kitchen garden would contain about 5 quarts of Peas, 1 each of Sangster's No. 1, or Emperor, Auvergne, Champion of England, Imperial, and some tall sort, as Ne Plus Ultra or British Queen, for if properly treated these bear largely and continuously; from 2 to 6 quarts of Broad Beans, according as they are liked or not; 1 pint of Scarlet Runners; 1 of Dwarf Kidney Beans; Carrot, 2 ozs. of Early Horn; 3 ozs. of a large keeping kind, as Long Surrey or Altringham; 2 ozs. Parsnip; 2 ozs. Beet; Onion, White Globe, 2 ozs., Lisbon, 2 ozs.; Spinach, 2 quarts, 1 of Round-leaved and 1 of Prickly-seeded; Early Dutch Turnip, 2 ozs., White Stone Turnip, 2 ozs.; Savoy, and Brussels Sprouts, half an ounce each. Of Enfield Market Cabbage, Green Coleworts, Walcheren, Early Cape, Purple Late Sprouting, and Miller's Dwarf Broccoli—Mammoth Celery, Incomparable Dwarf White Celery—White Cos, Brown Cos, White or Victoria Cabbage, and Hardy Hammersmith Lettuce—and of Endive, there should be half an ounce each. Other salads and herbs in proportion.

This I merely give as a sample of what I should consider as a fair proportion of what seeds would be required for the space and how I should select them; but I do not say that the list should be exactly the same every year, or that I should select more than once in that manner. Far would I be from recommending it as a guide to others; such matters are best left to those who alone have to deal with local circumstances, and who can, or at least should, be the best judges in the matter.

I simply write this in answer to "AN OLD SUBSCRIBER," who expresses interest in my former remarks, and so far I am glad to learn that they have been received with any interest at all; but I am also sorry if they have caused any unpleasantness between the employer and employed. There is such a thing in the world as trying to please all parties and pleasing no one, and when one is pleased another is displeased; but it is very difficult indeed to please all alike. If any dispute should have arisen between this employer and his gardener through what I have said, it is inadvertently on my part when trying to point out what I have found successful. But on the part of gardeners I must say that, although they do not always make the most of the means at their command, those means are more often too limited than otherwise, and that many of them have to work against adverse circumstances until they become tired of it and careless of the results.

There is one part of "AN OLD SUBSCRIBER's" letter which rather surprises me. I have always found that both Sea-kale

and Rhubarb can be grown if not forced as cheaply as, if not cheaper than, they can be bought. In fact, I have found that they will both grow luxuriantly almost anywhere and with little trouble; and if they can be bought cheaper than they can be grown it says very little either for the ground or the management. But stony loam is not the best soil in the world, although, as I said before, any soil may be made productive under proper management.—F. CHITTY.

HEATING HORTICULTURAL BUILDINGS.

(Concluded from page 112.)

HEATING BY FLUES.—I mentioned some few weeks ago that an extensive range of forcing and other houses at Ravensworth Castle, in the county of Durham, was heated by flues which had been in use more than half a century. Doubtless they have been repaired, and, perhaps, altered during that time; still they do their work well, and I do not know whether I should like a change to hot water in such a place, although, as I believe, within a circuit of five miles of the Castle, scores of miles of cast-iron pipes are made every year, and there is rarely a day passes but the sound of boiler-building is heard.

Flues have their advantages, and I am no enemy to flues when well constructed, and when used in such a place as the one I speak of where coals are cheap. The flue is also less liable to accident than hot water, and when a misfortune does happen it is much more easily rectified. Most men could find something to stop a leaky flue, but it requires days and the assistance of practical hands to repair a cracked boiler. I know of no way of renovating a cast-iron boiler but by replacing it with a new one, and this, perhaps, may have to be done at a time when the external thermometer may be 15° or more below the freezing-point. I by no means wish to detract from the merits of hot water—I only desire to give the flue its due; and if both modes of heating had had an equal amount of attention bestowed on their improvement, it is probable that that by means of flues would have arrived at a higher degree of perfection than it has yet attained. Still some advance has been made, and a plan my worthy employer allowed me to adopt here some five or six years ago having answered so well, I will at once describe it.

Having built two half-span-roofed houses, each 36 feet long by about 14 feet wide, and of a proportionate height for greenhouse plants of various kinds not requiring a high temperature, I thought it was needless to incur the expense of a hot-water apparatus, for the houses, being at some distance from the others, could not be heated by the existing means. It was, therefore, determined to try the old flue. The houses in question contained a broad front shelf or platform of about 3 feet wide, and then a path, the remainder being shelves to the back wall, and the doors entering at the ends opposite the path, which went straight through. The mode of heating has nothing unusual about it, for behind the back wall and in the centre where the partition was the fireplaces were dug, and a flue goes round each house. The two fireplaces are low enough to allow the smoke in the first instance to ascend a little. The flue at its commencement is of brickwork with stone covers, and so low that the covers are on a level with the pathway. It gradually rises as it turns under the front shelf, and about 2½ feet of this portion is also brick. The remainder of that under the shelf is cement pipe 12 inches in diameter, until near the farther end where a short length of brick flue descends to the level of the pathway, and the flue of cement pipe returns along the back wall again, finally passing upwards in a chimney over the fireplaces.

Now, there is nothing new in this, excepting the use of cement pipes, and I may safely say they do their duty well. Like every one who has occasion to put a fire into a flue that has long been out of use and is damp, I find a little escape of smoke is sure to ensue; yet, strange to say, such escape has always been from the brick flues and not from the cement pipes. I have not had occasion to clean the flues out yet; but the arrangement of having the slanting covers at the ends to take off readily will render the cleaning-out of the pipe an easy matter.

A less-sized pipe might have been advised by some, but it must be observed the houses are far from being small, and a less pipe would require cleaning-out much more frequently; besides the expense is not a serious matter, and the pipes being about an inch thick or a little more, they heat quickly. They will, it is true, also cool quickly, but this is of much less con-

sequence; for assuming the atmosphere of the house to be at 45° at four in the morning and the fire then to go out, the heated flue and warm atmosphere in the house would hardly suffer a diminution of temperature likely to be hurtful before morning, unless the frost were very severe indeed, or the house indifferently glazed. I may add, that I have never found any such inconvenience.

The pipes are 30 inches long and fit into each other, requiring but very little cement to set them. I believe the best kind of pipes for standing fire to be those made of Portland cement; but we have some made of Roman cement that stand very well. I have been told by the maker that he has had a Portland cement pipe heated by charcoal and over a blast almost to a white heat without any injury being done to it, and such heats are never wanted in flues. As the readers of THE JOURNAL OF HORTICULTURE may wish to know all particulars, I will at once state that the cost of Roman cement pipe of the kind used was, at Maidstone where it is made, 1s. 1d. per foot run. The Portland cement one was, I believe, 1s. 6d. per foot. Both inside and outside they are round, only a flattened surface is added to the bottom for them to rest on. Ours rest on slender brick pillars at the ends, the other part being all above ground, and the appearance being far from unsightly.

HEATING BY HOT WATER.—Although I have had something to do with hot-water heating for about thirty years, I am far from certain which is the best plan yet. Some systems are certainly bad, and have, consequently, fallen into disuse; while others, as, for instance, Perkins', are hardly adapted for horticultural buildings, besides being very expensive; and again, Kewley's plan has so many disadvantages that it cannot be recommended. There is, however, one old plan which I think rather hastily fell to the ground, without that fair trial which might have given it popularity. Unfortunately, the inventor patented his contrivance, which was an open gutter pipe with a moveable covering, which could be taken off either wholly or in part. I think this was Corbett's plan; but the fear of infringing the patent-right prevented, at the time, further improvement, and I think the plan has fallen into oblivion. The principal object of after-inventors has been to contrive a boiler capable of doing more work than any hitherto in use, and boilers of all shapes and forms have been brought before the public. Not the least useful among these was Sampson's spiral boiler, which was over the furnace, but continued in a spiral form round the chimney. The setting was an easy affair. I only mention this boiler as one not generally known.

The other classes of tubular, conical, retort, and saddle boilers have been so often before the reader as to require no explanation here; neither will I undertake to say which is the best, as so much depends on circumstances. I cannot, however, but observe that the old saddle boiler is by no means bad, and of our six boilers two of them are of that kind. The conical form may certainly economise fuel a little more; but it necessitates that fuel being of a particular kind, and is on that account objectionable, but they may be set so as to be heated by a wood fire; or any kind of rubbish that comes to hand may be burnt underneath. They may also often be left without attendance for a very long time with safety, not but that other boilers have equal advantages in this respect. I have known a coil of pipes to form the boiler, and it was said to do its work well; in fact, Perkins' heating apparatus is of this kind; but the one I allude to was much larger than Perkins'.

I am also told the retort is a good boiler, but I have neither seen that nor Messenger's at work: therefore, I can only speak by report. There is little doubt but those tubular boilers of Messrs. Weeks and of Mr. Ormson will heat the quickest; the only fear is, with so much complication of parts some place may give way at some unfortunate time. I would certainly never depend on one boiler alone to work a large space; for it is certain that some day an accident will take place, which may be attended with serious consequences. Two boilers, each contrived so as to connect itself with the series of pipes, would obviate much of the danger there is no doubt; but it might even happen that an accident might occur to a connecting-pipe, and derange the whole. This is certainly not so likely as an accident to the boiler, but it has been known to occur; it is, therefore, better not to have everything depending on one frail connection. One misfortune would do more harm than would pay many times over for the extra fuel used in heating by another apparatus.

Hot water, however, is so very accommodating that I would

by no means disparage it. It is clean, convenient, not likely to get out of order, and so very accommodating that the pipes will mount any reasonable height and descend also, and it is difficult to say how far the hot water will travel. It will circulate through pipes of any kind or size; for I have seen them round, half-round; flat, like a three-inch plank; and edgeways-up, like an inch deal. The last was, perhaps, the most foolish way of any. Generally speaking, four-inch pipes are the most convenient; I have seen some double that size and more, and we have one house here heated by tanks, through which the water circulates freely, and it works well. In fact, it is so difficult to put any limits to what may be done in hot water, that I leave the further following-out of the subject to other hands.

POLMAISE AND OTHER MODES OF SUPPLYING HEAT.—Polmaise was certainly at one time as strongly advocated by its patrons as orchard-houses are now by those similarly disposed to ride a hobby, and doubtless, to a certain extent, both are right. Polmaise has fallen into disuse or nearly so, to be now and then revived, perhaps under another name and with some supposed improvement; nevertheless, when it works well, I do not know of any mode of heating that will beat it for the welfare of the plants. Unfortunately, it is extravagant of fuel, and now and then such awkward misfortunes happen with it that it cannot be called safe. Many years ago Mr. Ogle, at Eridge Castle, tried it and reported upon it, but he has since abandoned it. The only place I have seen it in use of late years is at Sir E. Filmer's, Bart., East Sutton, where a Pine-pit is heated very well with it, and the plants do remarkably well; but Mr. Skinner, the gardener, says it is expensive in firing. There have been many variations of this mode of heating, some of them differing but little from the old-fashioned flue; it is, however, not in general repute at the present day, neither is it likely to be restored to popular favour.

Of the temporary modes of heating pits and small houses with Arnott or brick stoves, I cannot say much. The care required to attend to them is more than can at all times be calculated on from an unwilling servant, but that the enthusiastic cultivator will make them answer I have no doubt; indeed, there is very little but what the really industrious and persevering man can accomplish, and this he will be sure to do. Guarding against unpleasant vapour, and supplying moisture, not to the plants but to the atmosphere, will do much to prevent the evil effects of a mode of heating that ought only to be adopted in cases of emergency.

RELATIVE MERITS OF HOT WATER AND A SMOKE FLUE.—I expect the conclusion that many would come to would be favourable to hot water, but I am far from certain that its adoption is prudent in all cases. Certainly there are none in which it will not answer as well as the flue, but then it is much more expensive; and when the heat wanted does not, perhaps, exceed 40°, an expensive heating contrivance ought to be avoided. For such structures I would, therefore, advise a flue; but where anything like forcing is wanted, with a fire every day, perhaps, for six months or more, then have hot water. It will pay to have it in the latter case, although not in the former, for reasons that will be obvious to every one. There are also some other reasons which, in some cases, may operate one way or the other: thus the expense of firing is an item that may determine the kind of heating, for where fuel is expensive the most economical mode of using it, even if such apparatus be costly, will be the most prudent to adopt. Where firing is cheap another view of the matter may be taken. To illustrate this, I will mention the two extreme prices I have paid for coals. The lowest was 1s. per ton, and the highest 42s. Now, it required very little reasoning to show that an expensive apparatus to lessen the quantity of coals wanted in the one case might be advantageously entered into; while in the other, where the coals were cheap, it would be an unnecessary expenditure unless accompanied by other advantages. More than this need hardly be said, nevertheless I may again return to the subject.

J. ROBSON.

ORCHIDACEOUS PLANTS.

The third Part of "Select Orchidaceous Plants" by Messrs. Warner & Williams is fully worthy of its two predecessors, which is praise sufficient. It contains *Epidendrum prismatocarpum*, rare, pretty, and fragrant; *Lycaete Skinneri*, the most useful winter Orchid we possess; *Aerides nobile*, "one of the

most beautiful of its family;" and *Lælia Turneri*, "one of the finest plants known among Orchids." The coloured portraits of these are exquisite, and combined with the botanical descriptions and abundant practical notes, will render it eventually one of the most complete works upon Orchids hitherto published.

GASTROLOBIIUM CALYGINUM (LARGE-CALYXED GASTROLOBIIUM.)

Nat. ord., Papilionaceæ. *Linn.*, Decandria Monogynia.—A showy greenhouse shrub, of considerable value as an ornamental plant. The branches are smooth; the leaves are opposite (or ternate), elliptic, somewhat keeled, glaucous, and terminated by a long pungent awn; at their base is a pair of spreading decurved spiny stipules. The flowers grow oppositely in terminal or axillary racemes, and are very large; the standard deep orange with a yellow spot at the base margined with crimson; the wings and standard deep crimson; they grow from the axil of a large, obovate, membranous, inflated, strongly-nerved bract, the nerve being extended into a recurved mucro; the calyx is very large, the upper lip much largest, bifid with very obtuse segments, the segments of the lower lip ovate acute. The ovary is villose and distinctly stalked.



This interesting plant was raised by Messrs. Henderson, from Mr. Drummond's Swan-River seeds.—(*Gard. Mag. of Botany.*)

NEW VEGETABLES.

A YEAR or more ago seeds of one or two Chinese vegetables were disseminated through the medium of the Horticultural Society, or some other public body, one of the packages reaching the writer; but through some accident or mismanagement, I did not get any to grow. Perhaps some other of your readers may have been more fortunate, and if so, it would confer a favour on the community if the result were recorded.

The names given to me were so indistinctly written, and seemed intended for a word so uncouth and unpronounceable, that I cannot repeat them. The seeds were about the size of those of Cucumbers.

That the Celestial Empire contains vegetables that might be turned to useful account amongst us there is no doubt; and though our palates may have become too much habituated to the use of those we now have to easily accommodate themselves to the production of another country, the younger members of the community could easily accustom themselves to the new article, if it came before them in an agreeable and acceptable form. I therefore thus publicly ask, through the medium of your Journal, if any one has reared the new vegetables, and what is their opinion on their merits?—AN OLD SUBSCRIBER.

TO THE EDITORS OF THE JOURNAL OF HORTICULTURE,

AND THE MANY KIND FRIENDS, WHO, HAVING SYMPATHISING HEARTS, HAVE CONTRIBUTED SO LIBERALLY TOWARDS RELIEVING US IN OUR GREAT DISTRESS.

KIND LADIES AND GENTLEMEN,—We, the undersigned Lancashire botanists, having received much through your kindness and sympathy in this our hour of suffering, now return our heartfelt thanks. Many of us were suffering most acutely both for food and clothing, when our kind friend, Mr. John Hague, appealed to your Christian sympathies on our behalf—an appeal which has scarcely ever been made in vain on behalf of wretchedness and distress. In our case we feel more deeply the kindness of those friends at a distance who, though entire strangers, yet could feel for us more than the common sympathy of humanity, shown by a response that has both surprised and gladdened the hearts of the recipients, and filled them with thankfulness and gratitude, not only to the generous donors but to that kind Providence who has raised up such kind friends in this our time of need. Some of us were reduced almost to the last stage of destitution, because we could not become the recipients of parish allowance to be treated like common paupers, no distinction being made by the parish officials; neither could we stoop to beg, our only desire being to earn our bread by honest daily toil, which is the greatest sweetener to our cup through life. This was the reason why some of us were suffering, when our kind friend, Mr. Hague, made his appeal, and for your noble response we beg to tender our sincere thanks and heartfelt gratitude.

Also, to you gentlemen, the Editors of THE JOURNAL OF HORTICULTURE AND COTTAGE GARDENER.

And may the Giver of all good return you an hundred-fold for what you have lent Him; and may He add His blessing free from sorrow, and preserve you all in the enjoyment of health and happiness to a ripened age, is the sincere prayer of your most obedient humble servants,

Rodger Schofield, John Whitehead, Titus Broadly, Henry Collins, Joseph Harrop, Thomas Horrocks, John Dingham, William Kelsall, Joseph Longden, Mark Dean, Henry Newton, Joseph Beech, John Newton, John Oldham, James Pickering, James Smith, Robert Gordon, Charles Whitehead, John Roberts, John Taft, Edwin Chough, James Kirk Smith, Richard Bird, Edward Richardson, Uriah Kay, Lee Foden, Mrs. Howard, Frederic Schofield, William Parkinson, Samuel Moss, John Hulme, Nancy Smith, Jethro Ferns, James North, Henry Cropper, George Hokhouse, Luke Wild, Jethro Tinker, Ann Lees, Thomas Andrew, Mrs. James Parkinson, Daniel Hayden, Thomas Cheetham, Edward Lees, Thomas

Broadbent, William Middleton, John Kinder, Michael Ward, John Moss, James Smith, John Johnson, Thomas Birchall, James Stafford, William Scott, Benjamin Platt, Ebenezer Platt, John Middleton, Samuel Beard, James Platt, Daniel Platt, Charles Haigh.

SINCE I last wrote I have sold plants, &c., sent for the purpose of giving aid to the distressed botanists, to the amount of £3 16s., and have received from Mr. P. McCulloch, gardener to Sir A. A. Hood, Bart., M.P., Audries, Bridgewater, Somerset, 16s., collected from the men under him. I have been able to help eight botanists and their families in the neighbourhood of Broadbottom and Mottram, about six miles from here, whose destitution I only heard of three weeks ago. I wrote to the relieving officer of the district, and he gave me some valuable information about their distress. The principal mill in that district had been stopped thirteen months, and most of the persons I gave help to worked at it, and they were wretchedly off. There are eight more persons than the above who have received assistance.—JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CEREUS PTEROGONUS (Wing-angled Cereus).—*Nat. ord.*, Cactaceæ. *Linn.*, Icosandria Monogynia.—Native of Carthage, South America. Flowers white, blooming in August.—(*Botanical Magazine*, t. 5360.)

PHÆDRANASSA OBTUSA (Blunt Phædranassa).—*Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia.—Called also Phycelia obtusa. Native of Pichinca Mountain, near Quito, more than 10,000 feet high. Flowers scarlet, tipped with greenish-yellow. Blooming in winter.—(*Ibid.*, t. 5361.)

CYPRIPEDIUM HOOKERÆ (Lady Hooker's Cypripedium).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Diandria.—Imported by Messrs. Low & Sons, Clapton Nursery, from Borneo. Leaves variegated, dark green, with pale mottling. Flowers variously marked with yellow and purple on a pale green ground.—(*Ibid.*, t. 5362.)

PLUMBAGO ROSEA var. COCCINEA (Scarlet Rose Leadwort).—*Nat. ord.*, Plumbaginaceæ. *Linn.*, Pentandria Monogynia.—It has also been called *Thalia coccinea*. Messrs. Veitch & Sons, Exeter and Chelsea Nurseries, received seeds of it from the Neigherry Hills. Flowers brick red, in panicles.—(*Ibid.*, t. 5363.)

CINCHONA OFFICINALIS (La Condamine's Peruvian Bark).—*Nat. ord.*, Rubiaceæ. *Linn.*, Pentandria Monogynia.—Native of Ecuador Mountains. Flowers pink.—(*Ibid.*, t. 5364.)

FUCHSIAS.—*Sanspareil*, crimson tube and sepals, corolla white. *Hercules*, tube and sepals crimson, corolla double and deep purple-coloured. Raised by Mr. G. Smith, Tollington Nursery, Hornsey Road. Very beautiful.—(*Floral Magazine*, pl. 133.)

PELARGONIUMS.—*Monitor*, a large dark flower, deep shaded rose, with large black spot on each petal. Had first-class certificate. *Queen of Whites*, lower petals silvery white, upper petals carmine, with narrow white border. Had a first-class certificate. Both raised by Mr. Dobson.—(*Ibid.*, pl. 134.)

POMPON CHRYSANTHEMUMS.—*Fairest of the Fair*, florets lilac bluish with silvery tips. Raised by Mr. Salter. *Mary Lind*, upper side of florets lilac bluish, under side purplish. *Julia Engelbach*, golden, with brown points. These two were raised by Mr. Smith.—(*Ibid.*, pl. 135.)

HYBRID ACHIMENES.—*Carminata elegans*, spikes very large; flowers deep crimson. Raised by Mr. Parsons, of Danesbury, near Welwyn.—(*Ibid.*, pl. 136.)

PELARGONIUMS.—*Regina formosa* (Beck), rose-coloured. *Conflagration* (Foster), crimson red. *Royal Albert* (Hoyle), carmine rose. *Belle of the Ball* (Foster), sub-spotted rose. *Royalty* (Foster), very distinct rosy carmine.—(*Florist and Pomologist*.)

GROSSE CALEBASSE PEAR.—Seedling of Van Mons. Flesh crisp, juicy, sweet, but without much aroma. It is a very large variety.—(*Ibid.*)

METEOROLOGICAL OBSERVATIONS IN 1862.

HORTON HALL, BRADFORD, YORKSHIRE.

Latitude 53° 47' 36" N. Longitude 1° 44' 47" W. Height
above sea level, 496 feet.

	1862.	BAROMETER.			THERMOMETER.							HYGROMETER.				RAIN.							PREVAILING WINDS.										
		Mean reading.	Extreme highest.	Extreme lowest.	Mean max.	Mean min.	Mean.	Above (+) or below (-) average.*	Extreme highest.	Extreme lowest.	Highest in sun's rays.	Lowest on grass.	Earth 1 ft. deep mean.	Mean temp. of evaporation.	Mean temp. of dew-point.	Mean degree of humidity (Sat.=100.)	Rain fell on.	Snow fell on.	Hail fell on.	Fog prevailed on.	Frost prevailed on.	Amount of cloud 0—10 mean.	Amount.	Above (+) or below (-) the average.*	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	
January	29.761	Ins.	Ins.	Ins.	44.7	34.2	38.4	+1.8	94	21	58	16	36.7	37.0	34.7	84	15	1	1	1	1	2.24	+0.18	-0.90	1	1	1	1	1	1	1	1	
February	30.280	30.65	29.34	43.9	36.8	37.1	40.3	+4.6	53	21	61	16	40.5	38.0	33.4	82	16	2	2	2	2	4.89	+0.90	-1.24	1	2	8	4	3	1	6	3	
March	29.695	30.21	29.28	44.9	37.1	37.1	40.3	+4.0	57	19	71	13	38.9	38.1	36.7	84	10	2	1	1	1	4.62	+2.92	-3.94	1	4	16	1	1	1	1	1	
April	29.839	30.31	29.38	55.6	38.0	38.0	46.8	+4.0	61	25	64	20	43.0	42.3	36.4	87	14	2	2	2	2	5.17	+0.97	-0.44	3	4	16	1	1	1	1	1	
May	29.774	30.21	29.40	61.7	38.9	38.9	54.3	+4.5	72	32	104	38	52.6	53.0	50.2	81	14	2	2	2	2	5.17	+0.97	-0.44	3	4	16	1	1	1	1	1	
June	30.004	30.23	29.11	62.1	38.1	38.1	54.0	+4.8	72	40	98	38	52.8	53.2	50.2	81	14	2	2	2	2	5.17	+0.97	-0.44	3	4	16	1	1	1	1	1	
July	29.881	30.23	29.36	63.3	38.4	38.4	54.0	+4.8	72	40	104	38	52.8	53.2	50.2	81	14	2	2	2	2	5.17	+0.97	-0.44	3	4	16	1	1	1	1	1	
August	29.942	30.31	29.34	64.8	38.4	38.4	54.0	+4.8	72	40	104	38	52.8	53.2	50.2	81	14	2	2	2	2	5.17	+0.97	-0.44	3	4	16	1	1	1	1	1	
September	30.026	30.48	29.44	60.4	38.4	38.4	54.0	+4.8	72	40	104	38	52.8	53.2	50.2	81	14	2	2	2	2	5.17	+0.97	-0.44	3	4	16	1	1	1	1	1	
October	30.026	30.28	29.44	51.9	38.4	38.4	54.0	+4.8	72	40	104	38	52.8	53.2	50.2	81	14	2	2	2	2	5.17	+0.97	-0.44	3	4	16	1	1	1	1	1	
November	30.088	30.28	29.22	38.6	32.0	35.3	35.3	+2.4	53	21	62	16	38.9	39.2	34.9	84	15	2	2	2	2	2.82	+0.60	-1.56	1	10	1	1	3	4	16	3	
December	29.027	30.36	29.48	41.3	36.2	38.7	38.7	+2.4	46	31	56	28	38.4	38.2	36.7	86	15	2	2	2	2	2.82	+0.86	-1.06	1	1	1	1	3	4	16	3	
Means	29.897	30.321	29.280	52.6	40.4	46.5	46.5	+1.2	62.5	30.4	83.1	26.4	40.1	45.8	42.8	86	182	17	6	14	41	...	36.77	+1.05	...	6	36	32	44	28	98	74	50
Total

The average of the two preceding years.

The receiving surface of gauge is 8 inches from ground.

* The average of the ten preceding years.

+ The receiving surface of gauge is 8 inches from ground.

With the exception of the first three months the year was cold and wet, and decidedly ungenial to many flowers, fruits, and vegetables under the gardener's care. Although the harvest of the country at large was equal or nearly so to the average, and housed in fair condition, yet in this locality cereals were late in ripening, and when ripe the difficulty was to know when to cut the crops; for none being ready for cutting before October, and some not even then, a period of heavy rains, set in—not showers, but days of deluging heavy rain, which not only hindered harvest operations, but prevented late crops on wet lands from ripening.

On the 11th of October 0.61 of rain fell, 0.34 on the 12th, 0.65 on the 15th, 0.32 on the 16th, 0.38 on 18th, 0.32 on 19th, 0.61 on 20th, with hail and high wind, 0.71 on 21st, 0.36 on 22nd, accompanied by thunder, 1.06 on 23rd, followed by showers on the next two days; then 0.64 of rain and hail on 26th, 1.14 on 27th, and showers on the following day, succeeded by fog, which cleared away in the first frost on the 30th (27°). October was the wettest of any corresponding month during the last thirteen years, judging according to recorded observations; but according to those whose opinions were derived from experience it was the wettest October ever known. Though doleful be the tidings the worst is not yet told. Fields of Oats were standing in shock on the 10th and 11th of November, when the ground was covered with snow 3 inches thick. There was corn out on the 1st of December.

I have to note Turnips were small, Mangolds no crop, but Potatoes were good and free from disease. Herbage was abundant. Rye-grass, of which no inconsiderable quantity is needed, was good, and furnished three cuttings; Pacey's Perennial affording the best supply, and it is not so coarse as some varieties. Cutting grass on meadows was general in the beginning of July, but up to the 12th little was made into hay; when, finer weather setting in, the greater quantity was stacked in moderate condition.

A backward and wet spring hindered garden operations, but it was not worse than in the two preceding years. Owing to wetness of the soil seeds vegetated badly, and in many cases there was a total failure, entailing a second sowing.

The bloom on fruit trees was abundant and set well. There was an abundant crop of Gooseberries, but caterpillars threatened to annihilate them completely; so numerous were they that they infested the Ribes species in plantations. Of Currants, Red and White, the crop was good; of Black moderate. Raspberries were abundant and large, but insipid owing to the wet. Strawberries were a good crop, but maggot and canker made large gaps in the plantations. Apples were plentiful but small, and did not ripen properly; consequently they shrivelled more than usual, and proved flavourless; Pears a moderate crop; and the same may be said of Plums. Cherries proved to be a very fair crop, but nothing according to the promise of bloom. Peaches did not ripen on walls, and the crop was small. To the above it may perhaps be added that Grapes were much given to shank, poor in flavour, and very deficient in colour; notwithstanding this some admirable specimens were exhibited at the Bradford Show, and did great credit to the exhibitors. Melons were worthless in unlined pits and frames, and deficient in flavour under the most favourable circumstances.

Orchard-houses were a dead failure, and have been in this locality ever since their introduction; but I have to note that three beautiful specimens of Peach trees, in 11-inch pots, were exhibited by Mr. Comfort, gardener to J. Priestman, Esq., of Wheatley Hill, each tree averaging two dozen fruit, some of them measuring 8 inches in circumference. Also by their side was a Sweetwater Vine in a 12-inch pot, carrying eight bunches (if memory be a safe guide) of medium size and with good-sized berries; and a Fig tree, in an 11-inch pot, full of fruit of the best of all Figs—the Brown Turkey. Thus it would appear some succeed while others fail, and we have to confess we are one of the latter.

Carrots were a bad crop, and maggot-eaten. Onions no crop. Beet small—too small, but more than usual of top. Salsify and Scorzonera medium-sized and good in quality. Shallots much grown by cottagers, fair crop. Potatoes, earlies, poor crop; main crops good. Had a packet of the substitute for the Potato, Charophyllum bulbosum, from the Royal Horticultural Society; but it produced nothing like so good a substitute as a Carrot. The Ground-nut (*Bunium denudatum*) would be as good a substitute for the Potato as it.

Peas were a fair crop, running to haulm. The best we had

were Noble's Early Green Marrow, Dickson's Favourite, Veitch's Perfection, British Queen, and Sangster's No. 1—the favourite of your respected correspondent, "D., Deal." Though differing with him in taste, I would advise his sowing his favourite Sangster's No. 1 and the Warwick race at intervals of ten days or a fortnight, according to the supply needed, giving the sowings after April a manured trench as for Celery, and a good soaking of water once or twice a-week according to the state of the weather. Early Peas cannot stand drought; and unless the land is heavy or copious watering resorted to, they are only like so many pea-bullets.

Of Dwarf Kidney Beans and Scarlet Runners I never had a dish. Cauliflowers were late but good. Broccoli doing well. Borecole and the whole tribe of Coleworts have done pretty well, but the wet has made them very seedy-looking. Cabbages have been fearfully maggot-eaten at the root, in consequence of which many a healthy-looking plant withered when sun appeared, though that was seldom; others have clubbed instead of hearting. Celery was bad with us, but good in some places. The best I saw was growing in clay nearly as pure as brickmakers have it. Maggot attacked some (dry soot sprinkled on wet leaves will drive it away), but as to the maggot being the cause of failure I beg to demur. Celery, like the potato, is rendered so liable to disease by high cultivation, as to be little more than gorged and swelled out of health into disease.

Spinach leaves were a receptacle for the eggs of the white Butterfly, and the Winter one was there as well.

Lettuce and snails had a terrible struggle for life, but young Ducks scooped the slugs up; yet web-footed bipeds cannot be tolerated in gardens long, for no thunder-storm soddens the soil like them; and as for bantams and the whole tribe of hens, they are too much given to scratch, and they eat too much green food for my fancy.

Bedding plants cut a sorry figure; and, taking them altogether, for me there is nothing like the good old herbaceous border full of bloom in spring, delicious with Pinks and Carnations, and fragrant with Roses. Sure of a nosegay all the year round are those who tolerate flowering shrubs, bog plants, alpenes, and aquatics; besides, in geometrical gardens, handsome and brilliant as they may be in summer, interesting in winter with evergreens, and pretty in spring with bulbs, those mixtures are more frequently failures than successes.

Notwithstanding the adverse season we had a good exhibition here (Bradford). Plants were good. Mr. May, Bedale, had first-class Hollyhocks and Dahlias, the last somewhat hollow in centre; and Mr. Edwards, York, was a close competitor. The Carnations and Picotees at the National were superb. Messrs. Steward & Wood, of York, and Holland & Bayley, of Manchester, were the lions. However, horticultural exhibitions are not places to judge the seasons at, for there we have the choice-selected, but away from them we have generalities.

Three indifferent years succeeding each other must tell their tale on our trees from warmer climes, which I fear is too manifest; for Peach trees threaten to become evergreens, and many others have a like tendency.

We have a doleful beginning for a new year; rain and wind daily, and the ground like a sponge, do not augur well of 1863. —GEORGE ABBEY.

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHILE our climate maintains its variable character the necessity of conforming to its dictates in all gardening operations will exist. The continuance of fair weather will permit the operations that peculiarly belong to this month to be proceeded with. *Asparagus*, in mild weather that in frames or pits should have abundance of air after the shoots have made their appearance. Prepare ground for permanent beds; if the soil works well, to be trenched 2 feet deep at least, and plenty of good rotten stable manure incorporated with it during the operation. Mark off the beds 4 feet wide, and 2 feet for the alley, then mark the rows on the bed one in the centre and one at each side; lay a ridge of maiden loam, leaf mould, and sand, of equal parts, along where each row is to be planted, and on these ridges place the plants. They may be either one or two years old, but not more than two, the plants to be taken up with great care. When placed on the ridges, with an equal portion of roots on each side, cover them to the depth of 2 inches with pure sand if it can be procured, which will induce the plants to throw out

numerous young roots, which, passing through the sand, seize with avidity on the more nutritious compost prepared for them. Above the sand add 3 or 4 inches of loamy soil over the crowns; and should the season prove dry, mulch between the rows, and give occasionally waterings of liquid manure. *Onions*, plant the bulbs of last year which begin to grow, they will be found useful where there is a scarcity of sound ones. They may also be planted for seed. Plant the underground sort, if not done in the autumn. Weed and clean the autumn-sown. *Parsley*, a sowing to be made where the ground is in a fit state to receive the seed. *Peas*, make a sowing of Knight's Dwarf Marrow; at the same time some other approved sorts should be sown to keep up a succession. Sow also two or three sorts which come in for use quickly, as they will be fit to gather before the Marrows. All vacant ground to be dug as quickly as possible, so that it may be ready for cropping.

FLOWER GARDEN.

The weather calls upon us to expedite all retarded operations, particularly pruning. Turf may be cut and laid, and wood ashes spread on lawns where the grass is injured by moss. When the natural soil is not favourable for *Rhododendrons*, *Belgian Azaleas*, &c., an artificial mould may be gradually formed by sweeping the fallen leaves over the roots and covering them with sand every season. Prune and tie climbing plants. Prune *Roses*, unless they are wanted to flower late. Herbaceous perennials should be planted as early as convenient. Sweep and roll the lawn and walks. Where it may be necessary to increase the stock of any of the varieties of *Dahlias*, these should be placed in heat at once in order to secure cuttings. Look to *Crocus* bulbs, &c., planted in beds, and protect them from the depredations of sparrows and mice.

FRUIT GARDEN.

Prune *Raspberries*. Any *Gooseberries* or *Currants* not previously pruned should forthwith be attended to. Collect fir boughs to protect the blossom of Peach and Apricot trees. *Gooseberry* and *Currant* bushes occupy much less space in a garden trained to stakes, and afford an equal if not greater amount of fruit. Proceed with planting fruit trees where circumstances prevented its being done in the autumn.

STOVE.

Any specimen plants in this house which require shifting must be attended to in the course of the month. *Stanhopeas* and *Oncidiums* with other Orchids may be potted. Temperature 55° to 65° with a moist heat, and increase a degree or two every week for the next month. Shut up early.

GREENHOUSE AND CONSERVATORY.

The admission of air on all favourable occasions will conduce to the health and keep the various flowering-plants in unimpaired beauty for some weeks. *Hyacinths*, *Lilacs*, *Roses*, *Kalmias*, and *Azaleas* introduced will lend beauty and fragrance to the various groups. The rich yellow flowers of *Cytisus racemosus* will add in no slight degree to the general effect. The early-flowering plants of *Camellias* now returned from the conservatory or mixed greenhouse, should be placed in heat in order to be encouraged to make a vigorous and kindly growth, and to set their flower-buds in due season. Look carefully over the early-blooming plants—such as *Heaths*, *Azaleas*, and *Boronias*, and see that they are not getting too forward. There is less difficulty in keeping them back at the present time than when we have bright sunny days. Sow exotic and other seeds generally during the present and following month. As the principle of hybridisation is beginning to be understood and generally practised, doubtless additional interest will be discovered, and attention bestowed on the propagation of plants by seeds. Shift and tie-out *Pelargoniums* as may be required, and allow them plenty of space after this time, with all the light possible, and a free circulation of air whenever the weather will permit. Do not allow *Calceolarias* to suffer for want of pot-room, as any check at the present season might throw them prematurely into bloom. *Cinerarias* and other plants will require frequent shifting and placing at greater distances from each other, in order that air may be permitted to circulate freely among them.

FORGING-FIT.

Here a good stock of *Roses*, *Azaleas*, *Lilacs*, &c., should be coming into bloom. Take care to keep up a regular succession, and fumigate occasionally to keep all clean.

PITS AND FRAMES.

Give air freely to plants such as *Verbenas* and *Calceolarias*, and

carefully remove all decaying leaves. A batch of *Amaryllis* bulbs should now be shaken out and repotted in half-decayed turfy loam, mixed with a small portion of sand and a pretty liberal supply of charcoal. Remove to a warmer place any of the plants from which cuttings are required. Alpines and other rare plants in pots should now be looked over, remove all decayed matter, and stir up the surface of the soil. Those which it may be desirable to propagate should be divided into pieces, repotted, and placed again in the frame. W. KEANE.

DOINGS OF THE LAST WEEK.

In the kitchen garden the routine was much the same as last week, with the exception of choosing a dry day to plant some Potatoes of the Early Ashleaf in the open air on a ridged bank, planting only the south side. This had been ridged-up about 24 inches apart, and the sets, just sprung, were set in the furrows, and the nice, dry, aired earth of the ridge was trundled over them, after a slight sprinkling of lime. The sets were sprung an inch or so before planting. Turned out also into a bed over heated tree leaves, the same kind, plants 3 or 4 inches in height, in rows, 6 inches apart in the rows, and about 18 inches from row to row. The soil put over the leaves was about 6 inches deep, then the Potatoes were set on the level, the small roots carefully covered, and then covered with about 5 inches on the flat. These will have the earth raised to the stems 2 or 3 inches as they grow, which admits of the sun's rays passing up between the rows, and we think that from this mode the produce is rather better than when the soil is left on the level. For such work we have met with nothing to beat the true Ashleaf. The Handsworth and some others may come a few days earlier, but we do not find they are prized at table like an Ashleaf. This, however, may be a mere matter of taste, or even of prejudice, just as in the case of the watery white Turnip, because whiteness will be insisted on. For flavour, several of the yellows are, in our opinion, far superior; and for flavour and nourishment combined, commend us to a good Globe Swede that has lain in an open shed a week before cooking. If that is cut up, boiled thoroughly—and an hour at least will be required—if in liquor in which pork or other meat was boiled first all the better, and if a slice of the meat can be had with it, then there is at once a feast for a hungry prince as well as a hungry ploughman.

A gentleman lately told us that he quite envied the zest and relish with which the ploughboy standing by his horses, pitched in wedge after wedge of half-boiled pork and dry bread, stating his belief, and we are certain with much truth, that that boy had more gratification in thus eating to satisfy the demands of his appetite than he himself had in partaking of the finest made dishes, because he did so more as a matter of form than from any natural desire or want. It has been wisely ordered that there should be pleasure in eating; but that pleasure will be greatly dependant upon our working for it and the natural craving for it. Here, as in many other cases, the rich man and the hard-working man are placed more equally as to the means of happiness and true enjoyment than is generally imagined. The farmer, then, who wishes to kindly help his labourers, may, without any misgiving, allow them a few of his best Swede Turnips, and tell them how to cook them, which when well prepared will be almost as solid as cheese.

The Potatoes in the bed alluded to above will be our second crop, as those grown in pots, as previously mentioned, are tubering nicely. Some time ago we mentioned having some litter to throw over Radishes out of doors, sown in autumn, except there should be a sudden frost. These will naturally, and especially in such a winter as this, become hard, and we suppose must have sent them in once or twice too often, for a week ago we were mortified to see a fine plate of early Radishes from a frame, as crisp as possible, come out untasted. If a fortnight or three weeks had intervened between the old and the new, somebody would have found out the difference.

This simple matter of the Radishes may well furnish a lesson of sound policy. Some people will say, "I had such abundance of such and such good things, as thoroughly to sicken and tire me of them." Now, the great point is, to have sufficient without superfluity. Whenever superfluity is presented, the feeling of satiety displaces that of pleasure. Of course, in large places, where fine things must be had constantly, our duty is to produce them, and not think of the enjoyment. There can be no question that the very frequency, the uninterrupted supply of a certain

dish, will lessen the pleasure of partaking of it. The gentleman who tastes the first Cucumber of the season in April, and the same as respects Kidney Beans and Potatoes, will relish them more than the other gentleman who has them at his table every day all the winter. The satisfaction of the latter will spring less from selfish gratification than from the pleasure of presenting rarities for the enjoyment of his guests.

FRUIT GARDEN.

In addition to pruning, nailing, &c., unailing Peaches against walls, &c., damping vineries in hot days, and giving plenty of air to Peach trees opening their buds, the chief work has just been moving Strawberry-pots from vineries into a Peach-house, not because they will have more heat, but because in this dull weather they will have more light; and secondly, examining the buds and washing-off any black beetles or fly that made their appearance on the Peach trees coming into bloom. We never met with this ugly gentleman until last season, as fully described in a previous volume, and here he is again making his appearance here and there, notwithstanding all our care. We will, for the sake of others, repeat what was done. In November this house was smoked with sulphur and sawdust, killing, of course, every leaf that remained green, and, as we thought, every vestige of insect. Then, to make surer, in a few days the house was thoroughly syringed—trees, walls, and woodwork—with water at about 180°. After that the whole house, trees, walls, &c., were scrubbed with soap water; 2 inches of the surface soil of the house was then removed, and afterwards the walls were fresh washed with lime, and the trees painted with clay, sulphur, and Gishurst; and now the gentlemen are coming to tell us that they are not quite done for yet. It is true the house has been filled with bedding plants, which are now being taken out, but nothing whatever appears on them. We much fear they burrow, and lay their eggs pretty deep in the soil. Green fly is bad enough, but a mere trifle in comparison to this dark negro devastation. We see no remedy except hunting-up and destroying every one that appears. For many years one smoking for a Peach-house used to be about sufficient, or if repeated it was more for Strawberries, &c., than for Peaches. We are keeping the trees in orchard-house as cool as possible. We suspect that, from some young tree there, we imported this black fly.

ORNAMENTAL DEPARTMENT.

Those who grow *Gardenias*, *Rondeletias*, *Ixoras*, &c., should now put them into bottom heat. Cuttings should be put in of *Poinsettias* and *Euphorbia jacquiniæflora*, and in a week or two some of the old plants, if helped with bottom heat, will bloom earlier in the autumn, because they will have the end of summer to rest in. Orchids beginning to push should now be watered, and those in baskets dipped in water at about 75°. A higher temperature during the day may be maintained if the sun is at all bright, letting such stove-houses descend to from 60° to 65° at night. Small greenhouse plants may be shifted as wanted into pots a size larger; but larger shifts for specimens should not be given until the sun has gained more power—say the beginning and the middle of March—as such natural excitement is much better than that from any artificial heat. Proceeded with cuttings and potting as last week. We are sorry that the paragraph about *Verbena*-cuttings reads so confused; very likely more the result of careless writing than the fault of the printer. We would like to correct two things: first, the cuttings of *Verbenas*, alluded to at page 121, were not put in tiles three to 10 inches, but three in 2 inches. Then, a little farther down, beginning at the word "Keep," read as follows: "Keep the rough riddlings, mix them with an equal quantity of rough decayed leaf mould, and place that mixture on the top of the rotten dung, to the depth of 1½ or 2 inches." Make that level, and beat it slightly, and then cover this with the fine soil, &c.; and continue the same as given page 121. This will make all clear to "ONE WHO IS PUZZLED," at least we think so. The appearance of the cuttings just says we had better have delayed a little longer, as if we have a cold spring we shall have to try all methods to find room for them and other things.—R. F.

TRADE CATALOGUES RECEIVED.

Barr & Sugden, King Street, Covent Garden.—*Illustrated Guide to the Flower Garden, and Descriptive Seed List*. 1863.

E. G. Henderson & Son, Wellington Road, St. John's Wood.

N.W.—*Catalogue of Flower Seeds, and Select List of Agricultural and Vegetable Seeds*. 1863.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

DO OUR SOILS DECREASE IN FERTILITY? (*W. W. S.*).—We have shown your letter to "J.," and the following is an extract from his reply:—"I wrote anonymously my statements are no more justly charged with irreverence (!) and great presumption than the statements in the *Times* to which they are a reply, and which were also anonymous. If 'W. W. S.' will refer to 'Thomson's Vegetable Chemistry,' he will find that the saps of many plants have been analysed, but apotheme was never found in any one."

CLIPPING LAWN-FRUIT TREES (*J. Smith*).—You cannot be serious. No sane gardener would order his subordinates to "prune wall trees, such as Peaches and Cherries, with the garden shears."

PREVENTING GOOSEBERRY CATERPILLARS (*A New Subscriber*).—Try covering the entire surface of the soil with spent tanner's bark 2 inches deep. Do any of our readers know the effect of this or any other mode of prevention?

EAST WALL (*Mrs. C.*).—Situated at Sidmouth, and the wall only 6 feet high, you might grow against it Apricots, Peaches, and Nectarines; but, as profit is an object with you, we should prefer Morello Cherries. They rarely fail in producing a good crop, and realise a fair price and ready sale. Against the east end of your cottage you may have a Marie Louise Pear.

LIME WATER (*R. G. S.*).—For killing worms, a peck of lime to forty gallons of water are the proper proportions.

COLOURING A GARDEN WALL BLACK (*Emicus*).—We once coloured a wall a sort of slate colour, or rather a lead colour, by a mixture of ordinary whitewash and lamp black, to which a little yellow ochre was added to give it a more cheerful tint. We have also given some wooden and iron work a tolerably good chocolate colour by an admixture of yellow ochre and coal tar. The latter, we know, makes a good black alone; but unless black is especially wanted there are many objections to its use. For it fades fast on being exposed to hot sun, and if some dark grey or slate colour would do, the above mixture might answer your purpose. Of course an oil paint would be better, but will be much more expensive.

PEACH-HOUSE TREES IN BLOSSOM (*A Young Gardener*).—We fear, if you have been giving your trees "five or six waterpots full of water each twice a day," that the roots must be completely soddened. If so, for the future merely damp the paths and all the other parts of the house frequently while the trees are in bloom; and when they begin to grow, and the ground is a little drier, another good watering may be given, using rain water at all times. If your heating apparatus is a fine, occasionally wetting it will be of service; but too much moisture at this time is hurtful.

VINES IN A GREENHOUSE (*E. T. B.*).—As your house is a span-roofed one, and the Vines planted at one end, it would be easier to stretch the wires crossways to the lights, and if about a foot apart and somewhat less than that from the glass (not so far from the rafter, of course), by this means the rod might be pruned spur fashion, and itself occupying one wire, its side shoots which bear the fruit might occupy the wires adjoining on each side. You must not, however, occupy the whole roof with the Grape Vines or your plants underneath will suffer. We have trained Grape Vines in all directions, and have had them planted inside against the back wall and trained down the rafter. If the root be right, the top will bear almost any amount of distortion without injury.

PLANTS FOR CONSERVATORY PILLARS (*G. H.*).—Somewhat herbaceous in character—*Cobaea scandens*, *Eccecarpus scaber*, *Lophospermum scandens*, *Rhodochiton volubile*, *Maurandya Barclayana*, *Maurandya antirrhiniflora*. More shrubby, but strong—*Passiflora cœrulea*, *Passiflora racemosa*, *Bignonia Chirere*, *Bignonia jasminoides*, *Kennedy Marryatæ*, *Jasminum volubile*. Grapes—Lady Downe's, West's St. Peters; the first best where there is little heat.

PAINT FOR GLASS AS A SHADE (*Idem*).—Milk and whiting will make a good shade; perhaps a better is the following:—Heat a quart of jelly size near to boiling, add half a quarter or gill of turpentine, and the same of oil, and the size of a walnut of whiting reduced to powder; mix well. Choose a sunny day, and put on with a brush while the material is hot, as thinly as possible; follow with a dry brush and daub, and it will resemble ground glass.

COVENT GARDEN STOCKS (*E. B.*).—The market-gardeners' variety of scarlet intermediate Stock, if sown now, will bloom in July; if sown in autumn they bloom early in the summer following. The drawing and description you obligingly offer will be very acceptable if both are of the requisite standard.

GLOXINIAS IN THUMB-POTS (*Nora*).—We suspect these little pots are now full of roots. Shift the plants into 60's, and in five weeks shift again into 48's or 32's, giving the plants rich light soil, and a temperature of from 60° to 65°.

COCOA-NUT FIBRE DUST (*Charlotte Faulkner*).—For Ferns and other potted plants, by measure one-third of the dust to two-thirds of loam is a good proportion. To mix with the soil of your flower-borders put it one inch thick on the surface, and fork it in. If the soil is clayey twice that quantity will not be too much.

JASMINUM GRANDIFLORUM (*Sileia*).—This *Jasminum* would do for the rafter of your greenhouse if the roots and stems out of doors were protected. The best plan would be to have a small three-sided box with a top against the wall, and the stem surrounded with sawdust. Seeds would need to be protected from bantams until they were up, and after that, so far as we have seen, the bantams would do little harm.

ORCHIDS IN A CONSERVATORY (*J. E. S.*).—Every Orchid except hardy ones and those from the very warmest tropical positions may be grown in a heat of 65°. The tradesmen who advertise in our columns will give you the price in their priced lists, keeping in mind that the cheapest plants may be the dearest, as almost everything will depend on size. For a small house the following would be likely to suit you:—*In Pots*.—*Ærides odoratum*, *roseum*; *Angraecum caudatum*; *Catasetum cristatum*; *Cattleya crispata*, *Lodigesi*, *Mossiae*, *labiata*; *Cymbidium aloefolium*; *Dendrobium nobile*; *calceolaria*, *moniliforme*, *Farmeri*; *Epidendrum macrochilum*; *Miltonia speciosa*; *Odontoglossum grande*; *Oncidium flexuosum*, *papilio*; *Saccolabium Blumei*; *Zygopetalon crinitum*, *Mackayl.* *Baskets*.—*Cymbidium Devonianum*; *Dendrobium Fierardi*, *macranthum*, *pulchellum*; *Gongora atropurpurea*; *Stanhopea insignis*, *Devonensis*, *tigrina*, *oculata*. *On Blocks*.—*Lælia acuminata*; *Cattleya citrina*; *Oncidium pulchellum*; *Sophranitis grandiflora*; *Oncidium ciliatum*, &c.

HEATING BY A FLUE (*Inquisitor*).—Having flues, in one case round the house, and in the other round the front and ends, we cannot see what you want with stoves in the house besides, if the flues are sound and draw well, as with them any necessary heat could be obtained, and the dryness counteracted by evaporating-pans. However, if you wish a brick stove in the house the matter is simple enough, and any bricklayer would put one up from the description given at the page you allude to in "Greenhouses for the Many." Sections are also given in *Rivers' "Orchard-House."* If you wanted a great deal of heat we would make it 30 inches square outside measure, and $2\frac{1}{2}$ feet in height, and cover with an iron plate, and a course of tiles above, with an evaporating-trough on the top. The stove may stand against the back wall, or a little distance from it; but one secret of success is the shortness of the horizontal pipe that takes the smoke, &c., to an upright pipe outside. It should not be more than 2 or 3 feet, though we have had them longer; but it is best to err on the side of shortness. The other secret is to have a block in front of the smoke-opening, and several inches—say 2 or 3 inches—from it, so that the heat shall be thrown back on the sides and the fire, instead of passing too easily out; or you may have a small damper, either inside or outside, to regulate draught, and to give only a small egress for smoke and heated air after the fire is established. It would be the easiest plan for you to make the back wall of the house the back of the stove, and the asphalt and fuel doors inside; and then you would need to make only one hole for the smoke-pipe, which should be from 5 to 6 inches in diameter. Without a little care you may have dust and a little smoke at times, but very little if due care is taken, and nice dry fuel used for lighting. If these, however, are objectionable you could have these necessary openings behind the wall, but at the expense of more trouble and labour. We look upon the Arnott brick stove as the most economical of all modes for heating single houses, especially where no extraordinary heat is required from them. They are just so much better than iron that they heat and cool more slowly, and there is little danger of the air being burned.

SMALL BIRDS AND GOOSEBERRY BUDS (* *).—You have conferred a boon on the amateur class of gardeners, in discovering that small birds will not penetrate through a series of black cotton threads stretched over the tops and amongst the boughs of the trees. We know for a certainty that white thread does not frighten them more than one or two days; neither does red coloured worsted; and we much suspect they will in time become acquainted with your black strings. We are, however, obliged to you for reporting it; and hope some other correspondent will try it and report the result. You will perceive that however useful your plan may be on a small scale, it can hardly be carried into effect where, perhaps, a plantation of ten acres has to be attended to.

CHRYSANTHEMUM (*H. H.*).—The north of India and China is the natural home of this flower, but it is only found wild on the mountain regions of the former country. In the latter it has long been cultivated, and the double varieties we now admire so much were originated in that country, and there cultivated to a higher degree of perfection than we can hope to attain. It is purely an autumn-flowering plant, and the earliest period we have seen it in bloom was in the middle of August. It is, however, possible that earlier varieties may be obtained hereafter, and also later-flowering ones, for both are sought after, and no doubt time and perseverance will accomplish both objects.

SOLFASTERE ROSE (*B. O. B.*).—Your Rose, which you say was budded last year and is now 10 feet long, has made excellent use of its time. It would hardly, therefore, be proper to cut it much back, as it must have a well-established stock. If it be planted against a wall it would be best to band it down and train it horizontally backwards and forwards at the bottom of the wall, not even cutting off the end. By this means you will have your wall well furnished, for shoots will rise abundantly from all parts of the horizontal stem, while they are far from certain to do so on the upright one. SolfaSTERE is far from being a free-blooming Rose, but the above is likely to induce it to flower better than severe knife work.

MANAGEMENT OF CAPE BULBS (* *).—You are quite right in potting your recently-received bulbs in sandy loam, and do not give much water until they begin to grow, after which increase both water and heat; and it is possible a very robust one may want a shift into a larger pot, but this is not likely. After flowering, gradually withhold water, so as to ripen and give the bulbs a rest, but while they are in a growing state heat and moisture are requisite. We have seen bulbs of the kind we imagine yours must be weighing 1 lb. each. If they start to grow at once there is a good chance of their flowering; but when later, autumn sets in before they do so, and then only bloom imperfectly.

CAMELIAS (*J. B. D.*).—You must send fresh specimens, for the others, under the circumstances, were passed aside.

NAMES OF PLANTS (*C. T.*).—It is *Asplenium marinum* in a luxuriant condition. There is no such thing as *Asplenium letitia*, but a plant like yours has been miscalled *A. latum*. (*C. S. N.*).—The Gymnogramma is one of the sulphureous sports occasionally met with in hothouses. It has no particular interest, nor anything striking in its appearance. Gymnogrammas are well known to be sportive. (*M. B.*).—Your shrub is *Garrya elliptica*. (*Hersham*).—The leaf is like that of *Agrostus*, but we cannot be sure without seeing a flower.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

FEEDING POULTRY PROFITABLY.

E. F. asks us to give some instruction as to feeding poultry in the most profitable manner, and at the same time he complains of the quantity of food his birds consume. We are not surprised. We have often seen poultry yards inches deep in wasted food. We have seen two birds supplied with food enough to feed twenty. Fowls, like human beings, should leave off with an appetite. If they overfeed they lay the foundation of disease. First, then, no trough, no pan, no vessel of any kind to hold the fowl's food. The reason will at once be obvious. Fowls have no teeth, they have no means of mastication, and, therefore, their habit is to peck grain by grain, one at a time. In a trough a fowl takes a mouthful, which it has to bolt somehow or other to its great discomfort. Mouthful after mouthful follows, and then the bird becomes crop-bound, or squats about till it is seriously ill; this is the result of improper feeding, and, we unhesitatingly say, the inevitable result. It is a plain deviation from the laws of Nature. Fowls and all the tribe of Gallinacæ are intended to pick up their food grain by grain, and scrap by scrap. It is the condition of their health. While in search of food they find pieces of grass, herbs, small stones, and many little things that are essential to their health, although they escape our notice. It is also an incentive to exercise.

Whenever we want to succeed in having our pets in as good condition as wild birds, we must so far as possible confine them to the same habits of life, and we must make our arrangements a close imitation of the Pheasant, Partridge, and Grouse. These thrive and fatten on the stubble, and the apparently barren moor, while too often the petted fowl looks with careless eye on the barleymeal, and bread that lie about in all direction. The difference is, as between the appetite of a man who runs breakfast into luncheon, and with the help of a stimulating glass of wine lasts till dinner, which he can only peck at; and that of the man who runs home from the baker's after church on Sunday with a baked shoulder of mutton and potatoes under it, and who eats it in imagination all the way home.

The nearest approach to natural feeding is to give food by hand, and in small quantities, and scattered about. The most profitable food is ground oats. Let such a quantity as will be eaten be mixed and thrown by hand to the fowls so long as they will run after it—no longer. As soon as they appear indifferent about it, leave off feeding. If any appear on the ground you have overfed. In the midday give a little whole corn, but scatter it broadcast. Let the fowls have to look for it as Pheasants and Partridges search a stubble. Feed in the evening with meal after the same manner we have described for the morning.

Do not be led away by tender-hearted poultry-women, or by occasionally sulky poultry-men, when they say the birds are being starved and you can expect neither eggs nor chickens. If the fowls do not run after the bucket and the person who carries it they are not hungry; and if they are not hungry, they do not require feeding.

DEVIZES EXHIBITION OF POULTRY.

FEBRUARY 10TH AND 11TH.

THOUGH the numbers of entries at the Devizes Show last week fell somewhat short of those in preceding years, we can without restriction congratulate the Committee on their Exhibition of this year being quite the best collection of poultry ever yet brought together at this meeting. Two circumstances, most probably, tended equally to decrease the number of competitors—viz., first, it is now getting quite time to close poultry exhibitions for this season, as the breeding-time of most varieties has actually begun; consequently many fanciers are reluctant to exhibit on account of its obvious tendency to throw back many valuable birds in their early broods. The other reason is this: perhaps it would be well in future to lessen the entrance-money from 6s. to 5s. each pen, as that sum, combined with the incidental expenses of carriage, as it will be seen, from very long distances amounts in the aggregate to an outlay somewhat considerable when taken in ratio to the premiums offered, and this naturally deters the more distant competitors from subscribing.

We have on former occasions spoken highly of the Devizes Corn Exchange as a room for an exhibition of this kind, and

shall, therefore, simply now say that it is by no means an easy task to refer to any building better suited for a show of five or six hundred pens.

The Black *Spanish* were excellent as a class, but were scarcely in the perfect condition we anticipated. Mr. Brown, of Sheffield, took the principal prize with his well-known excellent pen, closely pressed by Mr. Lane, of Bristol, whose misfortune it was to have a really first-rate hen and cock both sadly injured about the combs and heads during their transit to Devizes. The third-prize birds of Mr. Rodbard, also of Bristol, comprised a lovely pair of hens; but mated with a cock so massive about the face as to be nearly blinded. His day as an exhibition bird is mostly bygone, and he appeared altogether listless and inactive. The Grey *Dorkings* were a grand collection, Viscountess Holmesdale standing, in spite of so capital an entry, far ahead of the general competition. Her ladyship's first-prize birds are too well known to be now specially described; but certainly they were not shown so well as heretofore. The second-prize birds were resy-combed ones, and were in much better condition than the others, though from the same exhibitor. They were a most unusually large pen of birds, but lacked much of the neatness and attractiveness of the first-prize specimens. The White *Dorkings* deserve especial mention, so much so, indeed, that in the single Dorking cock class of "Any colour," a White one became master of the sweepstakes. It is of very rare occurrence in such open competition. A peculiarly large fine old bird was exhibited in this last-named class, a Grey one, but so diseased about the comb as to render his chances of prizetaking hopeless. The class for either Black or Brown-breasted *Game* fowls was one of the best in the room, Mr. Fletcher, of Manchester, taking the lead with some first-rate Brown Reds shown in the most unexceptionable condition. We must here note, too, the success of this gentleman's yard in some of the other *Game* classes. His first-prize Red Piles, in the "Any other variety of *Game*" class, are, it is supposed, the best pen of Piles ever shown, and, somewhat strangely too, the cock is now fast approaching six years old, yet retains a marvellous condition, and still moults as true to colour as when a youngster. Mr. Fletcher's Black Red *Game* cock, the winner of the Society's silver cup for the "Best Single *Game* Cock," is a two-year-old; and should his condition prove maintainable up to his present standard he will be hard to beat anywhere. Mr. Whitwell's second-prize Brown Red was not in nearly the trim for exhibiting as when shown at Kendal a few weeks back. Mr. Dyas's Black Red, the third prize, is an exceedingly well-built, neat bird, but certainly "a small one." The *Cochins* were best in the Partridge-coloured and White varieties, which were really a show in themselves, even after the winners had travelled so far as from Oswestry and Kendal. Mr. Sykes's *Malays* were excellent. The Golden-pencilled *Hamburghs* were remarkable for the general imperfection of their combs; and it would be wisdom for exhibitors to bestow every care in their selections on this all-important point. Among the Golden-spangled were many of the best hens we ever yet saw. The *Polands* mustered strongly, and proved the best class ever yet seen of *Polands* at Devizes. The Sebright *Bantams* were so good that every pen save one obtains mention in the prize list; the cock in this one had a complete sickle-tail, though the two hens were of the highest character.

As it is always found at Devizes, the Buenos Ayrean *Duck* class was good and well-filled; the principal honour, however, travelled so far as Mr. Jessop, of Hull.

The *Turkeys* were few but capital; and when we mention the well-known names of Seamons and Fowler as competitors, none of our readers can doubt for a moment that the Ducks and Geese were as well represented as possible.

The management of the poultry on the part of the Committee admits of no improvement, and thus the order and regularity were unexceptionable. As we before hinted, however, if this Show were in future held a little earlier in the season, no doubt the number of entries would be considerably advanced, and therefore its pecuniary success greater.

SPANISH.—First, E. Brown, Sheffield. Second, H. Lane, Bristol. Third, J. R. Rodbard, Writington, Bristol. Commended, Rev. G. Hodson, North Petherton, Bridgwater; J. K. Fowler, Aylesbury.

DORKINGS, COLOURED.—First and Second, Viscountess Holmesdale, Linton Park, Staplehurst. Third, Mrs. A. Guy, Eaton Grantham. Highly Commended, Major Ward, Castle House, Calne; Mrs. M. Seamons, Hartwell, Aylesbury; Rev. M. Stark, Hull; J. B. Coleman, Beversbrook; T. R. Hulbert, Bradgeon, Cirencester.

DORKINGS, WHITE.—First, Mrs. H. Fookes, Whitechurch, Blandford. Second, Rev. G. Hodgson, North Petherton.

GAME, Black-breasted and other Reds.—First, J. Fletcher, Stoneclough, Manchester. Second, S. Matthews, Stowmarket. Third, A. H. Philpott and J. B. Weeks, Bromyard. Highly Commended, A. B. Dras, Madeley, Salop; A. Heath, Calne; H. Adams, Beverley; C. W. Brierley, Rochdale, Lancaster; G. Layard, Birmingham. Commended, A. B. Dras; J. Fletcher, Manchester; M. Billing, jun., Gravelly Hill, Birmingham.

GAME, Duckwings and other Greys and Blues.—First, J. Hindson, Everton, Liverpool. Second, J. Fletcher, Stoneclough, Manchester. Third, G. W. Langdale, Beverley, Yorkshire. Highly Commended, H. Adams, Beverley; S. Dupe, Evercreech. Commended, J. Wilders, jun., Croxton Kyriel, Grantham.

GAME, Any other variety.—First, J. Fletcher, Stoneclough, Manchester. Second, A. H. Philpott, and J. B. Weeks, Bromyard. Third, A. Guy, Eaton, Grantham. Commended, J. Fletcher; G. S. Cruwys, Cruwys Morechard Court, Tiverton.

COCHIN-CHINA, Cinnamon and Buff.—First, Mrs. H. Fookes, Whitchurch. Second, J. W. Kellaway, Merston.

COCHIN-CHINA, Brown and Partridge-feathered.—First, P. Cartwright, Oswestry. Second, H. Chavesse, King's Heath, Birmingham.

COCHIN-CHINA, Any other variety.—First and Second, G. C. Whitwell, Kendal.

MALAYS.—First, N. Sykes, jun., Mile End, London. Second, W. Watson, Kelly Farm, Calstock. Highly Commended, Master C. A. Ballance, Taunton; J. Choyce, jun., Harris Bridge, Atherstone.

HAMBURG, Gold-pencilled.—First, J. E. Powers, Biggleswade, Beds. Second, E. Payne, Wharf, Cardiff. Commended, Major Ward, Castle House, Calne.

HAMBURG, Silver-pencilled.—First, T. W. Walsh, Worcester. Second, J. E. Powers, Biggleswade.

HAMBURG, Gold-spangled.—First, N. Maitor, Doughton, Manchester. Second, M. Billing, jun., Gravelly Hill, Birmingham. Highly Commended, I. Davies, Harborne, Birmingham; W. Cuff, St. Fagan's, Cardiff.

HAMBURG, Silver-spangled.—First, T. Davies, Stow Hill, Newport. Second, Viscountess Holmesdale, Linton Park, Staplehurst. Highly Commended, Mrs. Pettat, Ashe Rectory, Basingstoke.

POLAND, Black with White Crest.—First and Second, T. B. Edwards, Lyndhurst, Hants. Commended, Mrs. Blay, the Poplars, Worcester.

POLAND, Any other variety.—First, Mrs. Blay, the Poplars, Worcester. Second, Mrs. Pettat, Ashe Rectory, Basingstoke.

BRAHMA POUTRA.—First, J. Hinton, Hinton, Bath. Second, Mrs. Seamons, Hartwell, Aylesbury. Highly Commended, J. K. Fowler, Aylesbury.

BANTAMS, Game.—First, T. H. D. Bayly, Ickwell House, Biggleswade. Second, J. Camm, Farnfield, Southwell. Highly Commended, T. Davies, Stow Hill, Newport. Commended, J. W. Kellaway, Merston; E. Payne, Wharf, Cardiff.

BANTAMS, Gold and Silver-laced.—First, T. H. D. Bayly, Biggleswade. Second, E. Jones, Bristol. Highly Commended, E. Jones; Rev. G. Hodson, North Petherton; E. Yeardeley, Sheffield. Commended, Mrs. Pettat.

BANTAMS, Any other variety.—First, E. Hutton, Leeds. Second, Mrs. H. Fookes, Whitchurch. Highly Commended, R. Brotherhood, jun. Commended, T. H. D. Bayly, Ickwell House; Rev. G. S. Cruwys.

ANY OTHER DISTINCT OR CROSS BREEDS.—First, S. Dupe, Evercreech. Second, J. Lamb, Highworth. Highly Commended, W. Manfield, jun. Commended, P. P. Cother, Salisbury; R. H. Nicholas, Newport.

GESE.—First, J. K. Fowler, Aylesbury. Second, W. Manfield, jun. Highly Commended, Mrs. D. Smith, Basingstoke; Mrs. Seamons, Aylesbury. Commended, J. P. Coleman, Beversbrook.

TURKEYS.—First, Miss Milward, Bath. Second, D. Smith. Highly Commended, J. P. Coleman, Beversbrook.

DUCKS, Aylesbury.—First and Second, Mrs. Seamons, Aylesbury. Highly Commended, J. P. Coleman.

DUCKS, Rouen.—First, J. R. Hulbert, Cirencester. Second, G. Hanks, Malmesbury. Highly Commended, D. H. W. Horlock, Corsham.

DUCKS, Black East Indian.—First, J. E. Jessop, Hull. Second, F. W. Earle, Prescott. Highly Commended, E. C. Phillips, Chippenham. Commended, Master C. A. Ballance, Taunton.

DUCKS, Any other variety.—First, T. H. D. Bayly. Second, E. Hutton. Commended, P. W. Brunnell.

GAME COCKS.—First, J. Fletcher, Stoneclough. Second, G. C. Whitwell, Kendal. Third, A. B. Dras, Madeley. Highly Commended, H. Adams; Rev. F. Watson, Suffolk; W. Long, Devizes. Commended, J. Fletcher; M. Billing, jun., Birmingham.

GAME BANTAM COCKS.—First, J. W. Kellaway. Second, C. W. Brierley, Rochdale. Third, T. H. D. Bayly. Highly Commended, J. Camm; W. Silvester, Sheffield. Commended, R. B. Postans, Essex; J. Camm.

SWEEPSTAKES.

SPANISH.—Prize, J. R. Rodbard, Bristol. Highly Commended, H. Lane, Bristol.

DORKINGS.—Prize, Mrs. D. Smith, Browning Hill House. Highly Commended, Viscountess Holmesdale, Linton Park.

COCHIN-CHINA.—Prize, J. W. Kellaway, Merston, I.W. Highly Commended, Major Hassard, Portsmouth.

HAMBURG (Pencilled).—Prize, J. Munn.

POLANDS.—Prize, J. Hinton, Hinton, Bath.

MALAYS.—Prize, W. Mansfield, jun., Portesham. Highly Commended, Master, C. A. Ballance, Taunton.

ANY BREED NOT MENTIONED, except Game and Game Bantams.—Prize, J. Hinton, Hinton, Bath. Highly Commended, J. Fares, Chertsey.

Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, officiated as Judge.

BIRMINGHAM PERIODICAL POULTRY AND PIGEON SALES.—At the sale on Tuesday last there was a very large attendance of buyers, some from very long distances, attracted, no doubt by the disposal of Mr. Tomlinson's surplus stock. Several birds sold at prices averaging from 30s. to 25 5s., and were distributed in the counties of Nottingham, Derby, Lancaster, York, &c.; but many found purchasers in the town and neighbourhood of Birmingham. Altogether 220 lots were sold, and the competition for Cochins of all colours, Spanish, Game, Dorkings, Bantams,

and Pigeons, was good, the amount realised being nearly £200. Mr. Lythall the Secretary of the Birmingham Cattle and Poultry Show Society, officiated as Auctioneer.

NANTWICH POULTRY EXHIBITION.

THE fourth annual Exhibition of poultry has just taken place at Nantwich, and we are happy to say it has proved by far the best of any held by the Society. Confined expressly to a radius of thirteen miles from the Town Hall, most persons would naturally anticipate not only a very limited amount of entries, but would probably expect to find the generality of the birds shown of comparatively inferior character to those we meet with in shows open to the whole kingdom. In the particular case of Nantwich, the results are quite the reverse, the entries being upwards of 350 pens, whilst the specimens generally have nothing to fear from comparison with those of our most popular meetings. At the first meeting, four years back, some mistakes in properly selecting the various pens of necessity occurred, a poultry show then being quite a new feature in the locality; but, as time wore on, this difficulty disappeared, and now the judgment displayed in the penning of all varieties shows at a glance not only that many of our best poultry-yards exist in this neighbourhood, but that the exhibition of poultry is perfectly understood, and combined with the closest emulation: hence only is it that the exhibitors of Nantwich are so perfectly competent not only to well fill their own Town Hall at their local meetings, but also to take no meagre share of the premiums at any other shows where they dare the competition. The Committee evidently entertain as good the importance of the old motto, "all hands to the wheel;" none of them are idle spectators, every one seems on the best and most friendly terms with his fellows, and therefore all arrangements progress in the most perfect order and unbroken regularity. It would be well for some other committees to become copyists on this point, and so prevent the unpleasantness that must inevitably arise, and that too frequently, where each shifts to his utmost all responsibility on to the shoulders of his colleagues, so that at length the duties of committeemen are either absolutely neglected or grudgingly performed. We must not digress further, but proceed to give some of the leading characteristics of the Show.

The Black *Spanish* were the first objects that met the eye of visitors, and both young and old were in far better condition than might have been expected. Some of the pullets were of very first-rate character.

By the catalogue arrangement Aylesbury *Ducks* came next in order, and rarely has so close a competition been recorded. Both first and second prizes were faultless in colour and bill, and, still more strangely, were of precisely the same weight. There was one feature, however, that decided the preference: the first-prize pen were shown in fair breeding order; the second had evidently been more highly fed. The Rouens generally were very good, but had to submit to the Aylesburies when competing for the plate for the best pen of Ducks of either breed. In the "Any other variety of Ducks" were some well-shown wild Ducks, so thoroughly domesticated as to eat freely from the hand, besides some really good Buenos Ayrean Ducks.

All the *Geese* were good, and comprised the Embden, Toulouse, and Mottled varieties.

In *Turkeys*, except the first-prize, which were of the Cambridge breed, there was not anything of superior quality.

Both White and also Grey *Dorkings* were capitally shown; indeed, it is certain they were far superior to those of most of our exhibitions. The Partridge *Cochins* were as good as could be desired, and this variety succeeded in obtaining the Society's plate for the best pen of poultry of any variety exhibited. The Buff *Cochins* were not nearly equal to them, but the White ones were a very good lot. A very strong entry next competed for the Licensed Victuallers' Cup, given to the best Game cockerel (any colour) exhibited. A Nantwich victualler won it, but was closely pressed by several others; and, falling into his hands, the cup will, it was foreboded, rather prove a honorary than a profitable achievement, if the demands of the disappointed as to filling and refilling it are to be complied with. Of the Game fowls as a whole we cannot express ourselves too highly. As always appears to be the case at Nantwich, the Brown Reds took precedence of all other colours, though many first-rate Black Reds were present. Two old cocks were disqualified, being entered as cockerels. The Golden-spangled were the best of the *Ham-*

burghs, and the Silver-spangled of the *Poland* fowls. Some very good *Bantams* were shown in their respective classes.

The *Pigeons* were quite a favoured portion of the Exhibition, and the collection of small singing birds was scarcely less attractive.

Great credit is due to Mr. Rhodes, the Hon. Sec., for his courteous and prompt attention to everything connected with the Show.

The Judge of the poultry was Mr. Edward Hewitt, of Sparkbrook, Birmingham; for the *Pigeons*, Mr. C. Cotten, of Crewe, and Mr. C. Bowles, of Chester; and for the *Canaries* and other song birds, Mr. John Ankers, assisted by the *Pigeon Judges*.

As the weather proved most propitious a very great attendance ensued, and the Society has even still further increased its hold on the good wishes of the neighbourhood. This, combined with the promise of a larger subscription list for future years, betokens that the perseverance of the Nantwich Committee has obtained the reward it so well merited.

We published the list of awards last week.

WARNING.

AFTER my advertisement in the *Journal* some few weeks ago, amongst other applications was one from a "Mr. Ridgway Beswick Lodge, near Manchester." His second letter ran as follows:—"I am in want of some good Carrier *Pigeons*, and knowing you to keep some first-class birds, you will oblige by sending me a pair each of Duns, Blues and Blacks. Send them first-rate birds, as price is no object. Send me word when you have sent them, also your charge for the lot, and I will remit payment on receiving the birds." Then, he says, "Direct for Mr. Ridgway, Beswick Lodge, near Manchester, to be left at the Ashton Station until called for, as that is the nearest station to my house, and I will send my man down for them." Now, I did not like this style at all, and civilly requested prepayment; but I have never heard from him since. I suspected it was a hoax, and asked a gentleman who lives in Manchester to inquire if there was such a name and place near. He took much trouble, looking in the "Directory," and inquiring of everybody likely to know, but all to no purpose, until this week, when he heard from some manufacturers in Beswick, that "Beswick Lodge" is a beerhouse at the bottom of Beswick Street, and several inquiries have been made for "Ridgway," who is not known there, but suspected to be a member of the "Long firm."—T. COLLEY.

BEE-KEEPING IN STAFFORDSHIRE.

THE last two seasons with me have been very bad. The spring of 1861 found me with only one stock, which sent out a swarm on July 1st, which on September 1st did not weigh 1 lb. heavier than when hived; so I determined to try superposing. Having had a queenless hive presented to me, I gorged them with food for several days, and at evening, about dusk, put the queenless stock on the top of the swarm, thinking they would fraternise with and descend to those below. Little fighting ensued, not more than a score being killed; but what was my surprise in a few days to find, that instead of the queenless stock descending according to my wishes, the others had gone up to them, leaving tenantless the handful of comb they had made. Thinking it best to let them remain undisturbed as the queenless stock, which was a swarm of 1860, had most comb, I fed them liberally, leaving the part-filled hive below. They came through the winter of 1861-2 in good order, and, after being provided with a fresh domicile by cutting-out the top-board of the lower hives with the combs adhering, and fitting it in a cap-hive, are now my strongest stock; but they are two storeys high, the top-board forming the division having two side apertures each about 2 square inches area. Will the division affect their future welfare? and will it prevent swarming? As neither stock swarmed last season, which was as bad as 1861, I shall be obliged by learning the opinion of "A RENFREWSHIRE BEE-KEEPER," and hope to hear a better account of his apiary than I am able to give of mine.—A NORTH-STAFFORDSHIRE BEE-KEEPER.

BEES.—The *Apiculteur*, a French apiarian journal, contains the following remarks:—"Bees do not pass the winter in a state of stupefaction, nor do they sleep much longer during that

season than in any other—all that depends upon the work they have to do. There are at all seasons some working bees alive and active in a hive, and at the time when provisions are being got in there are many at work day and night without taking any sleep at all. Their slumber is very light at all times, for they sleep with their eyes open; the slightest noise, a vivid light, or a current of air, is enough to awaken them; but the warmer the hive is the easier it is for them to sleep; hence they consume much less honey in a hive situated in a quiet place, little exposed to light and air, than in one more exposed. But if the outer temperature rises very high, this favours the laying of their eggs, and then a larger quantity of honey is consumed. It is, therefore, easy to explain why in bee-hives placed close to each other the consumption of honey is different during winter; and this is a circumstance not to be neglected, because colonies which before winter seemed to have provisions enough to last them all through the month of March, may be reduced to extremities before the end of January, in which case the apiculturist must come to their assistance. If the bees have been able to enjoy an excursion or two since Christmas they will easily partake of the liquid food which may be offered them in a cup placed inside the hive; but if not, the food so administered may cause dysentery. To avoid this, honeycombs full of honey should be cut out of other hives where the supply is plentiful, and transplanted into needy ones. This delicate operation is performed in a cellar by the light of a lantern and with the aid of smoke. The colonies thus assisted must be left in the cellar, if it be not too damp, until a fine day comes to allow of their flying out a little. The hives from which the honeycombs have been taken must also be left in the cellar for twenty-four hours at least, during which the bees feed on the honey that has exuded during the operation.

OUR LETTER BOX.

DEATH OF CHICKENS (*Alpha*).—All parasites become fatal to chickens, but it is seldom we find them among the dung. The only worm we know is the tape-worm, and this is only common to Game. Parasites in chickens are two—the lice in the feathers, and the red-worms in the throat. The first are dislodged by dust and ashes, especially wood ashes mixed with a little sulphur. There is little doubt the second are caused by impure water. We fancy that living in a greenhouse and pinery they have, in scratching or searching for food, found some parasitical insect that would attach itself to anything that had life. It is unquestionable these would cause death by constant worrying. We doubt, however, whether they are flies; even small chickens are great enemies to everything that has wings.

BUYING STOCK (*An Old Subscriber*).—If you apply to Mr. Bailly, 113, Mount Street, Grosvenor Square, you will obtain what you require.

EARLY-CHICKEN MANAGEMENT (*Constant Reader*).—Is your crate covered at night? Cochins are very hardy. Your feeding is judicious. We do not see why they should die, unless they get a chill. The nights are still long and cold, and the hen cannot cover them as well at a month old as she can when they are very young. We do not think a large crate necessary. The ordinary rip that we have described so often, closed at the back and both sides, but open in front, to allow the chickens to run in and out between the bars is all that is required; and has the advantage that the back can always be turned to the wind, and that the front is easily covered up at night. They do not want hay. We have given bruised hempseed with success to young chickens, and in cold and damp weather we give stale bread soaked in strong ale night and morning. We also give them beer to drink. Chickens sometimes die at that age from vermin. If this is found to be the case on examination, a little oil put under the wings and a little on the crown of the head will be the cure. The prevention will be a heap of dust in their haunts. If they are exposed to cold at night they perish from it. The rip should not be large. It should be open only in front, and it should be carefully covered at night.

HENS NOT LAYING (*C. Ellis*).—Hens will not lay in the winter, it is contrary to their nature. Pullets will lay at that season, but only on the condition they shall reach the laying age in the winter. In providing for this it is also necessary to bear in mind that progress is very slow in the winter months, and that unpropitious weather will hinder or retard laying. Eggs have been more plentiful during the last fortnight, but up to that time they were unusually scarce. Cochins and Brahmas are the best winter layers. If you had had either of those in your pure-bred and eight months old, you would have had eggs.

HEN LAYING SOFT EGGS (*James Reid*).—As she has, a free run, and, therefore, probably finds a supply of limy substances, the evil is occasioned by an over-irritated state of the ovary and egg-passage. This, we have little doubt, arises from her being over-fed. Give her a dessert-spoonful of castor oil; feed her moderately upon boiled potatoes mixed with very little barleymeal, and throw some limy bricklayers' rubbish where she can readily have access to it. In a week or two the soft eggs will be succeeded by hard-shelled eggs.

AVIARY (*A Constant Subscriber*).—The back, a brick wall covered with ivy, will not be injurious to *Canaries*, *Goldfinches*, and other small birds. Try, and we will hope that you may be able to keep the ivy flourishing.

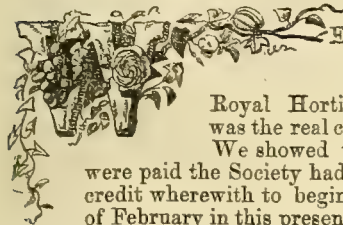
INCUBATOR (*Lex*).—You are quite right, the rearing of the chickens is much more difficult than hatching them. We will not trouble you for the extract you obligingly offer. Hybridising requires too much care, and the treatment varies too much to answer under one general query.

WEEKLY CALENDAR.

		FEB. 24—MARCH 2, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.		Sun Sets.		Moon Rises and Sets.		Moon's Age.		Clock before Sun.		Day of Year.
Day of M'nth.	Day of Week.		Barometer.	Thermom.	Wind.	Rain in Inches.	m. h.		m. h.		m. h.		m. h.	m. h.	m. h.		
24	Tu	ST. MATTHIAS.	39.124—29.956	degrees.		—	m. h.	m. h.	m. h.								
25	W	EMBER WEEK.	30.164—30.030	41—35	N.E.	—	59 af 6	28 af 5	28 m 0	6			13	30		55	
26	Th	Clusius born 1526. B.	30.310—30.283	41—32	E.	—	57 6	30 5	30 1	0			13	21		56	
27	F	Evelyn died 1706. G.	30.205—30.041	36—34	N.E.	—	55 6	32 5	27 2	8			13	11		57	
28	S	Frogs spawn.	30.027—29.927	37—32	N.E.	—	53 6	34 5	15 3	9			13	0		58	
1	SUN	2 SUNDAY IN LENT.	30.027—29.927	44—34	N.E.	—	51 6	35 5	55 3	10			12	49		59	
2	M	Hor. Walpole died 1797.	29.955—29.777	43—29	N.E.	—	48 6	37 5	23 4	11			12	38		60	
			29.591—29.500	37—15	E.	—	46 6	39 5	57 4	12			12	26		61	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 47.8° and 33.8° respectively. The greatest heat, 62°, occurred on the 27th, in 1846; and the lowest cold, 18°, on the 24th, in 1860. During the period 136 days were fine, and on 116 rain fell.

THE ROYAL HORTICULTURAL SOCIETY.



It showed in our last notice of the report of the Council of the Royal Horticultural Society what was the real condition of the finances.

We showed that after all liabilities were paid the Society had only £3141 9s. at their credit wherewith to begin the world on the 10th of February in this present year. We also stated that the receipts during the year had been, on revenue and capital account together, £48,081 0s. 4d. We shall now glance at the way in which this and upwards of £7000 in addition has been spent. In fact, the whole expenditure on the year has been £54,016 3s. 9d., without any part of the debentures being paid off.

And first in the account comes Chiswick. Chiswick last year cost £2400 18s. 3d., rent, taxes, labour, implements, seeds, plants, and everything included; but to the credit of this must go £435 12s. 10d. received for garden produce and charges, which, in fact, reduces the expenditure of Chiswick to £1965 5s. 5d., besides the enormous quantity of bedding-out and decorative plants which it has contributed towards the garden at Kensington. Chiswick, therefore, in round figures, costs the Society £1965.

We come now to the "Expenses of Management" account. This includes salaries, printing, advertising, Journal, the two Committees, foreign importations, furniture, wages, &c.—in short, everything connected with what may be called the offices, and amounts to £5990 1s. 2d. The first item is for salaries and collectors' poundage—£1439 3s. 2d. How much there may be set down for the latter we do not know; but suppose the whole amount were applied to salaries, which includes, we presume, the plant-collectors, there is nothing to complain of out of such an expenditure. The work to be done in the offices of such a Society, where there is so much book-keeping, management, and correspondence required, cannot be little; and where men of education and of competent ability are necessary, the remuneration must be in accordance with the status of the Society and the ability of the individuals. "Printing, Advertising, and Stationery," £787 9s. 9d. seems a very large amount, seeing that it does not include either the Journal or the same items for the expense of the exhibitions. Taking the whole of the printing, including Journal, advertisements, and stationery together, it amounts to £3344 9s. 5d.; of which £1105 15s. 3d. is for the Journal, and £1458 5s. 5d. is for the exhibitions. Now a question naturally arises, Is the Journal worth such an expenditure? The main object for which this was established was as a means of communication between the Council and the Fellows. At the meeting held at the rooms of the Society of Arts in the Adelphi in 1859, Fellows of the Society complained that they never knew what was going on, the announcements of the Council being confined exclusively to one

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gardening publication, and, as only some of the Fellows saw that paper, the rest were kept in ignorance of what was going on. It was upon this suggestion that the Journal was begun. The number of Fellows then was, perhaps, not half the number it is now, and consequently the cost of the Journal was proportionately less; but now that the Council advertise so liberally in the gardening and daily papers, we certainly do not see any necessity for a monthly Journal, and especially as not one tithe of the Fellows ever open it. For all purposes as regards the information to be communicated, a quarterly publication of modest pretensions would suffice, while all announcements of current events can be made through the ordinary advertising mediums as is done by all other public bodies.

The whole expense of the Fruit Committee during the year was £172 4s. 4d., and of the Floral £157 3s. 5d. These amounts speak for themselves.

The "Foreign Importations," £418 12s. 6d., we take to mean Mr. Weir's plants sent home, of which but little is as yet known. People are asking why it is Mr. Weir lingered so long about Rio, and did not penetrate at once to the district where greater success might have crowned his labours. It is nearly two years since Mr. Weir left England; and contrasting his labours with those of Mr. Fortune and Mr. J. G. Veitch in Japan, both of whom went and returned laden with treasures within two years, they certainly do not contrast very favourably. "Wages," which is exclusive of labour at Chiswick and at the Kensington Garden, is put down at £746 2s. 7d., and amounts to nearly one-half of the whole labour of the garden and conservatory. The miscellaneous—£431 14s. 9d. and law, £242 9s. 4d. complete the principal items in this account.

The next statement is "Expenses of Exhibitions," £9908 3s. 1d. This includes printing, advertising, and posting, £1458 5s. 5d.; prizes and medals, £2101 17s. 6d.; the "bands" played to the tune of £3022 7s. 1d.; and the tents cost £1672 9s. 6d. Police, making a new road, commission on tickets, &c., make up the remainder.

The "Kensington Garden Expenses" amount in all to £7261 0s. 5d., the principal items of which are labour £1823 3s. 2d.; rates, taxes, and insurance, put down by mistake as "rent, rates, taxes, and insurance," the rent being a distinct item, £1329 6s. 8d.; sculpture and ornaments, £1161 10s. 7d.; implements, manure, coals, and coke, £558 15s. 11d.; trees, plants, and seeds, £603 3s. 3d. Repairs sounds a strange item in the expenditure of an establishment where everything is supposed to be only a year old, but repairs have already been done during the year to the amount of £313 12s., or nearly the cost of the Fruit and Floral Committees together.

The interest on debentures amounts to £1817 14s. 7d., and the rent to the Royal Commissioners of 1851 is £2289 10s. annually. Upwards of a year being due on the 1st of January last, the amount stated in the account as being paid for rent to that date is £3318 12s.

We have thus gone over the leading heads of expenditure in the revenue account, which amounts altogether to £30,368 2s. 3d., and which, being deducted from the

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income £31,381 13s. 10d., leaves a profit on the year of £1013 11s. 7d. This being the joint property of the Society and the Royal Commissioners, each takes their share of profit, which amounts to £506 15s. 9½d.

A correspondent, signing himself "COMMON SENSE," sends a letter to "one of our contemporaries," the whole gist of which is, that he regards it as "a ground for satisfaction" that the Society has spent so much money; and that having only £3100 in hand, the nature of the works is such it will require so much more to be spent before the whole can be completed. That's all. He does not gainsay a single statement we put forward in our last article, the sole intention of which was to show our readers what was the exact condition of the Society, and which really could not be gathered from the statements made at the meeting, and with difficulty from the published accounts.

ASTERS.

THERE is a danger in all reforms that they may become revolutions, when people, not contented with a fair modicum of change, are for overturning existing institutions altogether; and as such seems to be the character of a paper on "German Flower Seeds" which appeared in a weekly contemporary, I venture, ere it quite passes away, to say a few words on the other side of the question. I do this with less hesitation, because I have myself strongly condemned this system of "collections," especially in the matter of genuine florists' flowers, where promises are held out that varieties shall come true in their respective classes and preserve the character of their parents—about as likely a thing as that the chameleon will never change its colour, and therefore, as far as the general bearing of the paper is concerned, I am "in accord" with the writer. What I object to is the length to which he has carried it, and the manner in which he has laid the whip on the broad shoulders of the German seedsmen, when the fault is on our own side of the water quite as much.

The objections made are—1, The excessive number of varieties advertised; and 2, the equally excessive number of colours, and, having enumerated from one of the seed catalogues (and one is a fair specimen of all), 183 varieties, he recommends us to discard all but twelve, and that eventually all parties will be benefited.

With regard to the number of varieties. That there are these different—dwarfs, tails, bouquets, hedgehogs, &c., is evident enough; and it may be that some people admire flowers like a hedgehog; (can't say I do any more than I admire the beast himself), but to say that there are only two kinds worth growing is rather too far a shunt in the other direction.

The following I believe to be well worth having:—1, Truffaut's Pæony-flowered; 2, Perfection Pæony-flowered, or Perfection simply in some catalogues; 3, Dwarf Chrysanthemum-flowered; 4, Cocardeau or Crown Asters; 5, Betteridge's Quilled. Where exhibitions are in view some would also add the Giant Emperor. The first two sorts differ rather in shape than in anything else, the Perfection being more imbricated, called by the raisers in France "*imbriqué*," while the others are "*pinvaine*." There is, I know, sometimes confusion in these classes; but all I wish to imply is, that there are two classes of the Pæony-flowered Asters differing mainly as to their form. With regard to the third class, it is one of the greatest acquisitions possible for us small gardeners; its dwarf habit, the freedom with which the flowers are produced, and the size of the blooms, making it quite an autumn gem. Entirely distinct from any of these are the Cocardeau, Cockade, or Crown Asters, having either scarlet or blue guard petals, and the centre filled-up with white. I know of no Asters more distinct than these are, or more pleasing. Then as to Betteridge's. I mention them because they are, as far as I have seen, the very finest of the Quilled varieties. Some of the German Quilled are very good, but I have never seen any that on the whole equalled these, and they invariably take first prize at the great metropolitan exhibitions. Here there are five, or at any rate four, sorts of Asters well worth growing—an opinion in which I think I shall be borne out by the majority of those who have grown them. And then with regard to the colours. Indubitably there is need of reform here. The difference between tweedledum and tweedledee was not more imperceptible than the difference of tints that these Asters, Stocks, Zinnias, &c., are made to assume. A rosy car-

mine and a carmine rose, a pale flesh and a light pink, do certainly sound very much alike, and, what is more, are very much alike; but I think the saddle has been hardly put upon the right horse.

On referring to the schedule of the Royal Horticultural Society, I find that exhibitors are required to show 24 distinct varieties in both, what are called by them, Tasselled and Quilled Asters. Here, then, according to the estimate of what ought to be the highest tribunal in the land for floricultural purposes, there are, instead of 12, 48 varieties worth cultivating! But I believe this to be a great mistake. It is possible in the Tasselled varieties, by selecting from the Giants, Emperors, Chrysanthemum-flowered, &c., to find 24 which may be distinct; but to do so in the Quilled ones is utterly impossible. I have over and over again gone over the stands as exhibited at Kensington and the Crystal Palace, and never have been able to make out more than a dozen, and even that with some difficulty. It is of no use, then, calling it a "German humbug," while we are ourselves encouraging them to carry it out and to fleece us. If we are really sincere in our endeavours we must begin at home. Charity is said to begin there, and certainly reformation ought. When exhibitors are expected to do less, then seedsmen will not urge their foreign correspondents to send them over distinct colours when no such distinctness exists. Nor do I see in what other way the difficulty is likely to be abated. It is perfectly true that no advantage is gained by purchasing the smaller-sized packets, as then one only obtains a larger proportion of the indistinct varieties; but if societies would say that they do not look for such a large number of colours, we should in that case be likely to see a change.

I may, perhaps, seem to be laying too great a stress on exhibitions as affecting these things, but those who know the progress of horticulture are aware how much they have to do with them. When a flower is thrown into the shade in schedules it very soon ceases to be so extensively grown; and who does not know that the amazing increase in the popularity of the Rose is due, in no slight degree, to those national exhibitions at which eager competition brings together people from all parts to show their flowers and to take a leaf—a Rose leaf—out of their neighbours' books? To regard them a show, as only a means of making money, is taking a very low estimate. It does more—it acts as an encouragement on all concerned when properly managed. And when a man finds that his neighbour Tomkins, with only half as much ground as he has, has walked off with a first prize for Roses, he begins to think, "Why shouldn't I do as well as Tomkins?" And then the desire of doing likewise comes in, and next season sees Smith very close on Tomkins' heels, and the following season perhaps ahead of him: therefore, I say, these reformations must begin here. Do not let them be too sweeping—nothing will be gained by that; but the good sense of the public will, I should think, prevent that.

We have to thank the foreign seed-growers for most of the really good additions to our novelties, and especially in Asters. Do not let us now deal too harshly with those who have so largely benefited our autumn-gardening.—D., Deal.

OLD ROSES *versus* NEW ROSES.

THE crafty magician in the "Arabian Nights," cried "new lamps for old;" and "new Roses for old ones" appears the annual cry of our neighbours across the channel. For one, I must confess myself heretic enough to doubt the value or wisdom of the exchange, particularly in the face of many of the importations we have received during the past few years; not that I hold novelty objectionable *per se*, but only when it is made the cover of unfounded pretension, or the medium for passing off mediocrity as sterling merit. And this holds good with respect to Roses as well as to graver matters. I could point out fifty or sixty floral impostors at least, whose only pretence to a place in the catalogues is their novelty, by virtue of which they exclude older and better kinds, which, consequently drop out of cultivation and are lost. It is quite certain that our nurserymen must, of course, repay themselves for their risk and expense in importing novelties. Twenty or twenty-five francs is the usual price for each new kind, without the expense of carriage; so that two or three plants of forty or fifty varieties, amount to a considerable outlay, which takes some getting-back, without reckoning any profit upon the enterprise.

On critically examining the lists since 1859, by the test of observation and experience, I find about six is the annual average of fresh varieties really deserving to be considered as acquisitions, and even many of these might be dispensed with, being equalled, if not excelled, by kinds already in cultivation. This has been particularly the case among the introductions of the last seven or eight years, during which, with the exception of *Comtesse de Chabillant* and the *Senateur* (perhaps *Santhenay*, though it is shy), no Rose of paramount distinctness and excellence has come out, though there have been several undeniably good.

What we want among the Perpetuals is such Roses as *Brennus*, *Blairi* No. 2; *Coupe d'Hébé*, *Paul Ricaut*, &c., among the summer Roses; or, let us take a bloom of the common *Cabbage*, and stain it with various shades, from the deepest crimson to the palest blush, to represent the type desirable to be attained in the autumnal bloomers. The foreign raisers appear to have descended into a bad and defective strain. The full, firm, globular, deep-petalled form, with plenty of "stuff" in it, has given way to large, it may be, but loose, "flopperty" blooms. In many cases, where size has been obtained it has been of a peony-like character, with irregular, jagged, and pointed petals, subversive of symmetry and offensive to taste. *Madame Furtado*, so much puffed-up two seasons ago, has been, perhaps, the nearest approach to the old and desirable style of flower; but it is a bad doer and grower, and the blooms of it shown at exhibitions are no "criterion" of its worth as a garden decoration.

Now that our own rosarians appear to have taken up in earnest the task of raising seedlings, we shall, no doubt, obtain some real advance in England's national emblem. They not only know the character of flower required, but are not likely, for the sake of their own reputation, to foist tinsel and paste on the floral world for true gems.

I shall just make a few remarks upon what, in my humble opinion, are the most noteworthy varieties which have appeared since 1859, and follow them with a list for comparison of older favourites, none of them, I believe, of later date than seven or eight years ago.

Among the new kinds of 1859, I am disposed to believe the following are the best—indeed, the only ones for that year necessary to retain as additions to our stock. *H.P.'s*, *Anna Alexieff*, a really good Rose, of the style of *Baronne Prevost*; *Anna de Diesbach*, large and showy, but loose-centered; *Belle de Bourg-la-Reine*, good; *Comtesse Cécile de Chabillant*, or, in short, "Chabillant," the light Rose of the past seven years; *Eugène Appert*, fine colour and habit, but of defective form, one of the "Moutan-petalled" class; *Armide*, fair; *Empereur de Maroc*, small but dark, and well-shaped. *B.*, *Dr. Berthet*, dark, good. *Teas*, *Homère*, *Madame Damaizin*, and *Madame J. Halphin*, free-growing and good. *Noisettes*, *Celine Forestier* and *America*. I am not sure whether *Triomphe de Rennes* belongs to this year.

From the list for 1860, I have taken the following:—*H.P.'s*, *Gloire de Santhenay*; *Louis XVI.*; *Madame Boll*, not free in autumn; *Madame C. Crapelet*; *Senateur Vaisse*, the best high-coloured Rose since *Général Jacqueminot*, and superior to that as a florists' flower, the Rose of 1860; *Vainqueur de Solferino*, a free bloomer; *Victor Verdier*, another "Moutan-petalled" flower, but bright and free, and late-blooming. *Teas*, *Duc de Magenta*, *Madame Blachet*, and *President (Paul's)*.

For 1861, I have noted *Duc de Cazes*, very dark; *General Washington*, large; *Madame Furtado*, over-rated; *Madame Pierson*, tolerably good; *Princesse Mathilde*, very dark but small, late bloomer, as is also *Jean Bart*, another small dark flower; *Reine des Violettes*, inferior, but peculiar; *Triomphe d'Amiens*, useful as a dashed or striped variety, of which there are few. *B.*, *Catherine Guillot* and *Modèle de Perfection*, both of which are improvements on *Louise Odier*. *Tea*, *Boule d'Or*.

I think that the past season, 1862, will afford us more good Roses than any of those I have previously remarked upon. The following have been shown well, and from personal acquaintance with their behaviour in the ground, corroborated by what I have observed and gleaned at the nurseries, I should say several promise to be first-rate, and many more to be good. *H.P.'s*, *Alphonse Damaizin*, *Charles Lefebvre*, *François Lacharme*, *Louise Darzins*, white. How badly we want a really good white Perpetual! I doubt if this will supply it. *Maréchal Vaillant*, *Madame Boutin*, *Madame J. Daran*, *Madame C. Wood*,

Maurice Bernardin, *Monte Christo* (query, *Léon des Combats* over again?), *Notre Dame de Fourvières*, *Professor Koch*, *Robert Fortune* (large incurved), *Souvenir de Comte Cavour*, *Vicomte Vigier*, *Wm. Pfitzer*. *Madame C. Wood*, *Professor Koch*, *Maréchal Vaillant*, *Vicomte Vigier*, and *Wm. Pfitzer*, are good late bloomers, and *La Brillante* is very free. The *Teas* I cannot speak upon from actual knowledge.

I shall now proceed to give a list of the older favourites. *H.P.'s*, *Alexandrine Bachmeteff*, type of the flat double flowers; *Alphonse de Lamartine*, nearly as regular as *Chabillant*; *Auguste Mié*, a truly royal flower; *Baronne Prevost*; *Baronne Hallez*; *Caroline de Sansal*; *Comte de Nanteuil*, a "Coupe d'Hébé"-formed flower; *Comte de Paris*; *Cornet*, a Perpetual Cabbage; *Duchesse d'Orléans*, *Duchess of Sutherland*, gems of size and symmetry; *Général Brea* and *Bedeau*; *Gloire de Parthenay*, and *Gloire de Vitry*, two splendid varieties, large, full, and free-blooming; *Lady Stuart*; *Louis Buonaparte*; *Jacques Lafitte*; *Jules Margottin*, the Perpetual *Brennus*, and still monarch of the carmine class; *La Ville de St. Denis*, superior to *Madame Furtado*, and a better grower; *La Reine*, really a queen of queens; *Léon des Combats*, as good as *Santhenay* when well done and in trim; *Madame de Cambacères*, for all purposes the soundest Rose, perhaps, grown; *Madame Vidot* and *Mrs. Rivers*, exquisitely beautiful in form; *Prince Léon* (what Rose surpasses this?) perfect in shape and colour, free in bloom, though of only moderate growth; *Reine des Fleurs*; *Sydonie*, a real globular flower; *Triomphe de Paris*; *Wm. Griffith*; and *Wm. Jesse*. *Bourbons*, *Madame Angelina*, *Queen*, *La Quintinie*, *Paul Joseph*, *Pierre de St. Cyr*, *Reveil*, *Souvenir de la Malmaison*, the best light Rose still, show that there has been less advance in this section than in any other. *Teas*, *Devoniensis*, old but unsurpassed; *Bougère*; *Goubault*; *Moiret*; *Souvenir d'un Ami*; *Gloire de Dijon*, scarcely a Tea except in scent, for its leathery camellia-like foliage and vigorous habit assimilate it to the strong-growing *Bourbons*. *Noisettes*, *Lamarque*, *Solfaterre*, and *Narcisse* (query, a Tea?)

Now, whether the Rose has undergone that improvement so frequently boasted of may well be doubted after comparing such varieties as enumerated above with their more modern rivals. Some advance may have been made, perhaps, in colour, especially in the darker kinds; but even that will disappear if the clouded, shaded, and uncertain nondescripts now so prevalent are allowed to become an established taste. Want of space prevents me from making this paper so exhaustive of the subject as I could wish; nevertheless, it may serve to suggest matter for consideration to fellow rosarians. Meanwhile, whether new or old, *Floreat Rosa!*—W. D. PRIOR, *Homerton*.

DIVISION OF VINE-BORDERS.

THE utility of this may be questioned, and the idea may seem novel, and, perhaps, interesting to some; but improvement after improvement comes looming in the distance, and in the process of time they become immediate realities. The plan I advance is, that the roots of every individual Vine be separated from those of its fellows by a four-inch brick wall running transversely through the border, both outside and in.

By the above means more command is gained over every plant. First, in withholding or giving moisture according to the individual necessities and constitutions of the plants, for, in general, vineries are planted with different varieties; hence the application. Second, it facilitates the lifting or transplanting of any individual Vine, and completely obviates the necessity of crippling the roots of that particular Vine, or those of its fellows. Third, in renewing the soil, a compost may be given suitable to the appetite of any variety of Vine. Again, when a limited number of Vines are grown, and a continuous supply demanded, when the Vines wear out from constant hard forcing, the replanting of the house would be easily effected by taking out every alternate Vine, or every third Vine, so that in three years the house might be renewed, both in plants and soil, and never miss a crop. These brick walls would also assist in airing and keeping the border sweet.—P. M., *Combe Abbey*.

[We think all your reasons good ones, except the airing of the border. We do not see that solid brick walls would help that much. Many years ago Mr. Mearns planted his Vines in separate pits or boxes, so to speak; and at one of our best places, we recollect some fifteen years ago seeing early Vines so planted in separate brick boxes, and a flue below them, which

answered well, and permitted of changing and renewing as you suggest. In fact, no doubt the plan would be more general but for the expense, gardeners finding enough of trouble to get a border done, let alone dividing it with walls.]

PLANTING POTATOES ON THE RIDGE SYSTEM.

ONE correspondent, "D.," says, "I intend to plant sixty acres of Potatoes on the ridge system, as I am certain it will prove the right plan. The question is, How? Your garden method is, of course, out of the question. We find manure a necessary adjunct for a good crop, and the width of the ridges must necessarily be determined by the width between cart wheels, which in most cases is 5 feet; hence 2½ feet must be the width of each ridge. This I contend is not a fair trial, as there is not a sufficient width of earth on the top to secure room for a large quantity of good tubers. Supposing, however, that it is so, or is made so by deep cultivation between the ridges, and moulding-up twice, then how would you plant the sets? On the manure would not be safe. Besides, it would be too deep if ridged-up with the plough (8 to 12 inches). Would dibbling by hand on the top of the ridge, after the plough, do? Again, supposing 5 cwt. of guano per acre were sown broadcast and the ridges closed-up at once from the winter "till," the guano would be all there, and the ridges might be made any width. How would the dibble do then? Is 3 feet too wide for field cultivation?"

It is, according to my judgment radically wrong to apply raw manure in the drills when planting the Potato. It must be bad practice to place a pulpy tuber in a mass of sweltering corruption! The microscope shows the Potato to be one of the most delicately-constructed vegetables in creation, and even should the sets escape the festering evil, when in a poor soil dung is used after this manner under the idea of making the most of it, the young plants may grow away very freely at first; but as the roots lengthen, they do so into a barren soil—an abundant machinery with a scarcity of raw material—just when the formation of young tubers and the advancing state of the growth of the plants require an extra supply of nourishment. The start they had at first secured a vigorous foliage, to become stunted, starved, and unfruitful for lack of nourishment. But "D." finds "manure necessary," whereby I presume his land is light. I would, therefore, advise eighteen or twenty loads per acre to be spread and ploughed and well worked into the body of the land immediately, for properly the dung should have been administered last November; and if 3 cwt. or so of superphosphate of lime were sown broadcast just before the land is ridged-up, it would do no harm. If the land is well drained and has been pulverised with the subsoil plough to the depth of 18 inches or 2 feet, and so made permeable to the warmth and moisture of the atmosphere, I should consider that to be far before the most bountiful application of raw dung for the Potato now, if it were coupled with a top-dressing of lime or guano at planting time.

Lime is especially favourable to the growth of the Potato, and in some form or other is generally present in plants. Light lands require it in a less proportion than heavy soils, though even light soils are rendered more compact in consequence of the lime attracting moisture powerfully from the air. It cannot prove but beneficial to a clay, for it not only destroys the myriads of insect life to which moisture is congenial, but speedily converts to vegetable mould the stubborn fragments of previous crops, besides acting on the inorganic ingredients brought forward by the subsoiler and rendering soluble the salts of the earth along with the acids, and adapting them for the nutriment of vegetable life. Talk of the "earth being in its dotage" on account of the "exhaustion of vegetable mould," is nonsense, so long as there remains a subsoil to be brought up every few years to the action of a winter's frost and then a dressing of quicklime to tackle it. On a stiff clay I would use from seventy to eighty bushels of quicklime, procured fresh from the kiln, and spread it, not over-slacked, on the surface of the land just before ridging-up. If a light soil and guano should be decided upon, I would sow it broadcast just before ridging at the rate of from 10 to 15 cwt. per acre.

The manner in which I have said I would apply the dung, &c., does away with the necessity of trundling cart wheels between the ridges, and of the plough to split the ridges again for the purpose of covering over the dung. I should not like to

trust to a thirty-inch-wide ridge on good ground—3 feet in that case for the field culture of medium-topping sorts of Potatoes, would do very well. For the very large-tubed and branching sorts I should prefer a forty-two-inch base for my ridge to rest upon, and for it to be formed 1 foot broad at its apex, which could be eventually achieved by passing a light roller over the tops of the ridges. In Shropshire, where they manage these things better—at least, in so far as regards the cultivation of the Swede Turnip—I think, than in any other county, barring, perhaps, some parts of the county of Angus and thereaway, they would put a horse to a double mould-board plough and finish off tidily between the ridges almost as fast as a man could walk.

Unless "D." is satisfied with his ploughman's accomplishments in this matter, and on so large a scale, if I were he I really should feel greatly inclined to advertise in the *Hereford Journal* for a man, who is an adept in ridging with the plough, to come from the neighbourhood of Ludlow, or the radius from thence to Shrewsbury, for the occasion. I have enjoyed the sight of whole fields in ridges about there struck out to the nicest admeasurement, and as straight as ramrods.

Yes, the dibble would be the instrument for the field; the sets should be placed 7 or 8 inches deep, and I would set my face entirely against after-moulding. By hoe and by hand I would keep down the weeds and pick off the blossoms, for from them we may anticipate seed, the formation of which compels nature's exertion to the uttermost, and, of course, at the expense of the tubers, of which in due time, and the Fates being propitious, I would guarantee a crop on our ridge system to far surpass that on the old pottering, moulding-up plan so long the vogue.

The way I have dovetailed a compromise between the garden and the field for "D.'s" consideration is one which I hope may suit his views. What I have written I have not written without regard to diffidence. I should be sorry to mislead by advising a system which I have not proved by trial; still I have confidence sufficient in my recommendation to say, had I the opportunity I would work it out. Another correspondent, "C. S.," who inquires "whether Potatoes can be planted efficiently with the plough on the ridge system?" is answered by the above. To "D." of Newcastle, I answer, what I mean by the "flat" is the old system of burying the sets in the ground and moulding them up afterwards as they grow, in contradistinction to laying the sets on the surface of the soil, and then casting over them with a spade the mould from the centre between the rows, which thus constitute the ridge and trench system, and the Potatoes do not require to be moulded afterwards.—UPWARDS AND ONWARDS.

TEMPORARY DECORATIONS OF ROOMS FOR FESTIVE OCCASIONS.

A CORRESPONDENT has very properly called the attention of the Editors of THE JOURNAL OF HORTICULTURE to the important subject of decorating public halls and other places of resort on special occasions, like the auspicious one to which the British public are looking forward with so much interest at the present time—the marriage of the Prince of Wales.

Although the art of applying material so as to produce a pleasing and beautiful effect, has been studied by a class who have dignified their calling by the high-sounding term of Decorators, there are many who are obliged to undertake the practice of the art themselves in times like that which is now approaching: therefore, a few hints may be useful to them.

When we see the manner in which some of our churches are decorated at Christmas as compared with what they were twenty years ago, it is apparent that one of the most important items for temporary decoration, evergreens, has not hitherto entered so freely into the general display of public rooms as they might be made to do. It is, therefore, chiefly with a view to urge their claims to notice, that I am induced to repeat much of the substance of an article I formerly contributed, adding such other matter as may seem necessary to make the subject fully understood. At the same time I hope, after the event now approaching is over, some readers of this Journal will report the features of any particular place that was tastefully and yet economically decorated, for when a good display has to be made at a trifling or reasonable cost, the items that compose it must be cheap and plentiful. Mechanical men generally look on manufactured goods as the most proper for every purpose, useful or ornamental; hence the decorative features of public rooms

in large towns generally consist of drapery with some fanciful disposition of the lights used, evergreens being but sparingly employed. Perhaps the inability to obtain these in sufficient quantity may have been one preventive to their general use, or a sort of dogged adherence to pre-existing custom may have kept them away. Certain it is, that foliage has latterly become more fashionable as a copy for ornamentation, whether in embroidery, carving, or sculpture; and since such is the case, assuredly the original itself ought to be introduced wherever this can be done with advantage.

Of late years most large rooms intended for public assemblies have been more or less embellished by the architect. I mean those that have been built during the last twenty years, and more especially those that have been erected during the last ten years. Such rooms necessarily require another kind of temporary ornamentation when they are to be temporarily used for a purpose other than that they are daily wanted for. Rich cornices, mouldings, fluted columns, and elaborately carved capitals, friezes, and the like ought, of course, to stand out in bold relief, and what additional decoration is done ought to be of a kind not to interfere with them. The colour of the walls has also a considerable bearing on the kind of decoration to be used; and if the general hue be dark, as, for instance, oak panelling or such like, evergreens cannot well be introduced, excepting with drapery of a light colour. If, on the other hand, the ground and principal colouring of the walls be light, evergreens may then be used with advantage in considerable quantity, and in various ways, especially if the room be without much architectural ornament, but large and lofty.

Assuming, therefore, that a room of this kind is the one to be dealt with, the first thing to do is, to ascertain where nails can be put in without injury to the work, and so work the materials accordingly; for, as the object aimed at is simply to give a decorative appearance to the place for a very limited time, as little damage to permanent works ought to be inflicted as possible. Let us now take a view of the kinds of evergreens best suited to such a purpose, and in the first place it is right to say, that however much we may try to imitate the natural features of vegetation, when we mutilate or amputate its parts we cannot under any circumstances put the same together in any form to resemble them in their natural condition. A certain amount of artificial workmanship must, therefore, at all times be evident; but the more carefully such work is concealed the better. All clumsy work especially ought to be kept out of sight. As Nature in general presents to our view only one side of a leaf, and that, of course, the best side, a similar arrangement ought to guide artificial work as well, but as this cannot always be done, it is better to use only such foliage as presents a tolerably good appearance on both sides, as well as possesses the good property of a stiff leafstalk, the leaves thickly set on the bough, and of a substance strong enough to endure, without withering, as long a time as possible. It is, of course, difficult to find all these qualities united in one plant, but the nearer it approaches being so the better it is adapted for the purpose here intended.

Sometimes a thick-set branch is not so much wanted as a loose feathery one, and very often a flat branch of the latter kind is very convenient to place against a wall. For this purpose nothing is better than the common Laurel, which may be worked into a very nice cornice-piece by selecting branches of about 18 inches wide, more or less, as the size of the room requires, and nailing them to a narrow slip of wood of the same colour as the walls, the tips of one shoot overlying the base end of the other in such a way as to form a nice flat surface. These prepared cornice-pieces as they may be called, can be easily attached to the angles of the room where the cornice usually is made, and the leafy figures will sit close to both ceiling and wall, spreading out in an open spray-like form a foot or more each way. Some other shrubs may do as well as the common Laurel, but I do not know of any thing that will do better, the regularly set and stiff foliage showing to great advantage against a white or pale-coloured wall or ceiling.

Similar wreaths might be made to hang down any naked corners, or where some projection seemed to require relief, taking care of course not to overload the room with too much; but if there be very large spaces of naked wall, it would be better, in addition to the cornice-work noted above, to prepare a few flat pieces of evergreens to fasten upon such spaces. These may be made easily enough by having a small piece of board not more than 6 or 8 inches square, upon which nice flat pieces of evergreen may be nailed with their points all outwards. If a little care be taken in assorting their thick ends so as to hide the board and also their cut parts, the whole will appear a flat uniform surface of evergreens, the outside of all being to the front. These prepared evergreen pictures, as they may be called, may be of any size, but few rooms will require them more than from 3 to 4 feet in diameter. If there be no nails in the walls to which they can be suspended, a string to the cornice where a nail can be put in will do. Observe, these masses of dressed evergreens as well as those forming the cornice-work of the room ought not to be too thick and dense, as feathery open pieces showing their foliage in front of the wall and ceiling are all that is wanted. Rosettes of white and pink with a small piece of fine wire will do to fasten them to the evergreens, and they may be used rather liberally. In those masses occupying the plain wall which, as above, we have called evergreen pictures, these rosettes may be arranged in some fanciful form, as a circle, star, shield, or any device that may be most appropriate. The event the decoration is owing to may suggest either a monogram or any other feature that could be carried out easily, clearly, and yet simply, for the most homely plainness is better than any badly executed device of greater intricacy.

The above remarks refer more especially to large rooms having no architectural ornament of their own; but as many possess beauties which it would be improper to hide, another description of ornamental work must be adopted. Assuming a rich cornice to surround the room, the side walls below this may be rendered gay with evergreens tied-up in long continuous festoonwork. somewhat thus:—

CEILING.



The diameter of each semicircle should not be less than 6 feet, unless in small rooms; but if we take 6 feet as a standard the radius or dip of the festoon ought to be 3 feet at least. The character of the room and its fittings will, however, determine the size of the festoons, and at all places where they finish, a drop or pendant of the same character may hang down by the wall. In making the festoon, I have found short twiggy pieces of Ivy, as the spur piece from some old tree or wall that had not been cut for many years, short leafy twigs of about a foot long with not too much old wood about them, answer best, and are easily fastened to a length of small string of a dark colour so as not to show. The operation of making these festoons is quick

after a beginning is made. A quantity of small twiggy pieces of Ivy are prepared, and one end of the string is fastened to a nail or hook anywhere, while the person gives the string a hitch round the thick ends of one or two pieces of Ivy, and a sort of knot is formed by such hitch. One or two more pieces of Ivy are fastened in like manner to the string a few inches farther on so that their tops hide the base of the former piece, and this is continued to any required length. The end at starting being temporarily fastened to something is a great advantage. We have, however, generally found that pieces of 6 or 8 feet long were quite long enough to carry, as they can easily be united on the spot where they are wanted.

A little care in selecting suitable pieces of Ivy and in tying them on will insure a uniform and nice-looking wreath sufficiently thick to hide the thick ends of their stems, and not so thick as to appear bundled.

Other evergreens—as Box, Laurustinus, Phillyrea and the like will do as well as Ivy, but not better; while common Laurel, having its leaves all arranged flatways, does not answer so well. Portugal Laurel does better, and any evergreen having leaves of sufficient firmness to remain without flagging for the length of time required will do, if they are not too obstinate in showing too obviously a reversed position when accidentally placed that way. I have never been able to do much with Hollies on this account. Their weight, rigidity, and prickliness render them intractable objects to deal with, and unless they have their own way they look badly. Generally speaking small-leaved shrubby plants look best, and after trying a great many things we have found Ivy the most useful. The tufts of berries are an improvement rather than the reverse, and we have sometimes taken the trouble to dip them in a sort of batter of plaster of Paris, thus giving them the character of a bunch of white berries; but as the process is troublesome it has rarely been done on an extensive scale.

I may observe that, besides the upper part of the walls of these rooms being hung in the way described with this festoon-work, the ceiling may also be crossed in various directions in like manner, taking advantage of anything by which the festoons can be suspended from the ceiling. A lamp-hook is very useful for this purpose, care being taken that the evergreens are out of the reach of the lights. The downward curves of these festoons should be sufficiently graceful without appearing to crowd the roof or lower it. Sometimes festoons from the central lamp-hook may be made to radiate to the ceiling in all directions; but it is better not to crowd too much, and the appearance of festoons is not so good when viewed in any other direction but that of facing the observer or diagonally to him; endways they are bad, and so also when they are crowded. These festoons, whether against the side walls or suspended from the ceiling, may all be more or less ornamented with rosettes—pink and white alternately being the best, and not the two colours blended in one. If the room seems to require more evergreen decorations, small star-looking objects may be made by sewing about a dozen common Laurel leaves to a card, arranging them in a whorl-like form about a foot or more in diameter. These may be fastened against any part of a blank wall (a rosette ornamenting the centre of each), and they will produce a good effect; for, although evergreens add life to a scene of this kind, too much of them becomes heavy and cumbersome.

Besides the above method of using evergreens, they may also be tied in like manner to any object that may be turned to account. I have sometimes used strong wire or small iron rods bent into scrollwork and other fanciful forms, which may be stretched in various ways across a room, and fastened-up against the walls in the character of brackets or cantilevers, taking care that all the parts of the framework are distinctly seen through. Sometimes from the brackets or scrollwork pendants may be hung; and there are many other ways of increasing the general effect, only do not by any means crowd any parts. Any lettering or fancy device rendered necessary by the character of the festivity may be worked in evergreen as above, and many other devices suitable to particular places may be adopted. Shrubs with berries on may now and then be worked-in with good effect. Privet would have been very useful this way, only its berries being black do not show so well; and, as before stated, Holly is obstinate, and not adapted for small work.

These observations are intended for rooms having light-coloured walls and ceilings; but for oak-panelled or dark-coloured ones drapery must be used. If the wall be good, and to a certain extent ornamented by breaks or panels, I would not cover the whole with stripes of white and pink calico, as is often done, but drape the upper portion of the room with festoonwork of a liberal quantity of such calico, and if need be a slight string of evergreen festoonwork might be placed upon the drapery with pendant strings of both at suitable places. The lower part of the walls might be entirely covered with cloth if necessary—say for 6 feet up, which gives a warm and comfortable appearance; while the ceiling might be festooned over, or fanciful devices in ironwork covered with evergreens might be introduced there, as I suppose the ceiling to be white.

Flags may be worked-in with advantage, but they ought not to occupy too prominent a position; and if only ornamented

flags be used, do not let them be too large so as to conceal everything else. A number of flags arranged as a fan look well over a doorway, or at the end of a room; and a series of uniform-sized ones arranged on flagstuffs pointing from the sides inwards at an elevation of not less than 35° also look very well; but do not by any means cover the whole of the roof with them, as the eye likes to rest on some empty space, and musicians complain of the presence of flags marring their performances.

It is needless here entering into the subject of lighting public rooms of the description given above; but if temporary lights have to be adopted the objects that hold them will require covering in some way or other; and often an admixture of drapery and evergreens comes in good stead here. Any slender work done in evergreens may be performed with twigs of Irish Yew or some other small-leaved plant, Box being the next best. The dressing of the tin cups and sockets to a candlestand may be very well done with these two evergreens; but if only a board be used slung from the wall, it must be entirely concealed by drapery in the first instance, and that more or less ornamented with foliage or flowers. Makeshifts of many kinds are often enough used, and they answer the purpose very well.

The above refers entirely to such ornamental work as is done in-doors, as triumphal arches, &c. Similar decorations outside are more especially mechanical features, requiring a framework more or less substantial. These need not be gone into here. The nicety of workmanship necessary in the fastening of the evergreens in the interior is not wanted for them, large and bold lines being more required, accompanied with the stability necessary to withstand high winds and other casualties.

I hope that any one who discovers any new mode of using evergreens or other cheap material for giving a cheerful and pleasing effect to a room or suite of rooms will give the readers of THE JOURNAL OF HORTICULTURE the benefit of his discovery. Suggestions on this subject are often welcomed by those who, for the first time perhaps in their lifetime, are called on to ornament an assembly-room. Perhaps, too, some happy effect may be produced at a cheap rate by some mode of using the materials different from what is described above. The subject is certainly not of less importance than dinner-table decoration, which has received its meed of attention.—J. ROBSON.

ROYAL HORTICULTURAL SOCIETY.

REPORT OF THE COUNCIL TO THE ANNIVERSARY MEETING,
FEBRUARY 10, 1863.

THE first duty of the Council on meeting the Fellows on the present occasion is to congratulate them on the success which has attended the Society during the past season.

A reference to the balance sheet appended to this report will show that the receipts have largely exceeded those of the previous year.

While thankfully acknowledging this measure of success, the Council cannot but feel that had H.R.H. the deeply lamented Prince Consort, who laid the foundation of it, and to whom it is mainly due, been spared to the Society, results even much beyond this would have been achieved. A very large portion of the prosperity which the Society has enjoyed beyond its ordinary receipts is referable to the Great Exhibition. The interests of the two undertakings during the past year were closely linked together, the same causes which injured or benefited the one equally affecting the other. Had, therefore, the influence of His Royal Highness been spared to it, it cannot be doubted that the Council would now have had to present a report even more favourable than the present.

Out of the receipts during the year, amounting to £29,800, a sum of £8676 was received as the Society's share of the joint season tickets, a sum of £1125 from the various refreshment contractors for portions of the Society's premises let to them, and £5029 from the promenades, chiefly drawn on those days when the charge for admission from the Exhibition to the garden was sixpence.

The flower shows produced upwards of £5000, which is the largest amount that has ever been drawn by the Society from that source in any one year. Had it not been for the large number of joint-ticket-holders, this amount would of course have been still greater. The shows themselves were also of unparalleled excellence, the Council having determined that nothing should be spared to make them worthy of the Society,

and such as would leave a favourable impression on the numerous visitors from abroad. A statement is given in the appendix, showing the amounts received and the expenses disbursed at these shows, so far as the latter can be separated from the general expenses of the establishment.

The Council have also to report favourably on a more important portion of the financial resources of the Society—viz., that drawn from the subscriptions. The following comparative statement of the number of Fellows, and their rates of payment, as at 31st December, 1861, and 31st December, 1862, shows the increase during the course of the year—viz.,

	As at 31st Dec., 1861.		As at 31st Dec., 1862.	
	Payable in advance.	Retro- spectively.	Payable in advance.	Retro- spectively.
Fellows paying 1 guinea.....	...	10	7	3
" " 3 guineas.....	...	25	16	9
" " 2 " ".....	716	6	912	6
" " 4 " ".....	915	215	1307	80
Fellows who have compounded by paying 20 guineas.....	334	...	386	...
" " 40 " ".....	555	..	587	...
	2520	256	3215	98
	256		98	
	2776		3313	
			2776	
Increase .....	...	...	537	...

The above table shows the actual state of matters each year, at 31st December. But on taking deaths and resignations into account, it appears that 633 new Fellows have joined the Society since 31st December, 1861, and that there have been 55 deaths, and 41 resignations.

It will be seen from the above table that the recommendation of the Council in last year's report, that Fellows who paid retrospectively should change their retrospective payment into one in advance, has been well responded to—the number of retrospective subscribers having been reduced from 256 to 98. Many of those who are still in this position have no doubt continued so from inadvertence, and it is hoped that in another year the number may be still further reduced.

Through the consideration of the Fellows too, the transference of the period of payment from the 1st of May to 1st of January has been all but unanimously carried into effect.

As regards the expenditure, the unfinished state of the garden, together with the exceptional nature of the year, added to the fact that the previous season was equally exceptional from its being the opening year of the reconstituted Society, and from its only extending over eight instead of twelve months, prevent the receipts and expenditure of the two years being contrasted with each other, and the Council must confine themselves to treating the expenditure of each by itself.

The expenses of the publications of the Society are large, owing to the considerable number of Fellows; but the information contained in them is (the Council have every reason to believe) considered valuable by the Fellows at large. The Council, however, with the view of making it contribute to its own support, have resolved to allow advertisements to be received on horticultural and scientific subjects.

Mr. Weir, the plant-collector in South Brazil, has examined and reported on a district not much known, and when last heard from was on his way to explore new ground in the interior. Mr. Cooper, the plant-collector in South Africa, was sent out as an explorer at the private charges of Mr. Wilson Saunders, the Treasurer of the Society, who admitted it to a share of Mr. Cooper's collections on terms so liberal as to be almost gratuitous. Mr. Cooper explored the district of the Drachenberg Mountains, lying to the south-west of Natal, and found it, although in many parts barren, to contain a considerable number of plants of interest to the botanist, and some of much beauty, well worthy the attention of the horticulturist. The product of the labours of both these collectors have either already been distributed, or are about to be distributed among the Fellows by ballot.

The expenses of Chiswick have this year amounted to £2354, from which a sum of £435 may be deducted, which has been received for fruit sold and reimbursement of garden charges.

Upwards of 50,000 bedding-out plants have been reared at Chiswick last year for use at South Kensington. Further, it is to be noted that the Fellows have received large quantities (upwards of 3000 packages) of cuttings of Vines and other fruit-trees from this garden; that an unrivalled collection of fruit-trees is there maintained for the comparison and testing of all kinds of fruits; that the experiments and trials of the Fruit and Floral Committees are conducted there, and a large portion of the flower-seeds grown which are distributed amongst the Fellows. 2610 packets of valuable seeds, 11,000 plants, and 166 lots of bulbs have been distributed from these or other sources during the past year. In addition there have been distributed 1500 packages of seeds of vegetables, and a like number of packages of flower seeds.

The expenses of the garden at South Kensington have amounted to £6063. The details of which this is composed will be found in the appendix.

The expenses for promenades and exhibitions have largely repaid themselves, besides affording much gratification to the Fellows, and the Council have resolved to continue the promenades during the present season, twice a-week from 16th May to 1st August.

The Council have the satisfaction of informing the Fellows that the Commissioners of 1851, through the Expenses Committee, with whom rests on their behalf the control and regulation of the expenses of the Society, in the most liberal manner authorised the expenditure of a considerable amount of the receipts in the execution of works which strictly speaking belong to capital—a liberality which in the present year, when there is a surplus to the half of which the Commissioners are entitled as their share of profit, is equivalent to themselves paying the half of these expenses.

The Commissioners of 1851 have throughout shown the utmost desire to promote in every way within their power the completion of the garden. It is to them that the Society owes the beautiful façade of the refreshment-room. They have paved the upper arcades during the season, and lent, as above mentioned, valuable assistance towards the completion of the garden, its clothing and decoration—works which the Council have felt to be of pressing importance. As regards the decoration of the garden, the Council have been much assisted by the liberality of the Fellows, who have allowed their subscriptions, originally intended for the French fountains, to be applied in the purchase of works of art for the garden.

As regards the planting of the garden, the Council have, they trust, effected considerable improvements in it by the introduction of clumps of trees and shrubs. They have also provided a large supply of bulbs for its spring decoration, and they have to acknowledge the assistance received by presents from Her Majesty, and some of the Fellows.

A great deal, no doubt, still remains to be done, but so far as these objects are concerned, the work already executed justifies the Council in looking at their progress with satisfaction. It is otherwise, however, with a part of the garden less under their control; a portion of the arcades still remains unfinished, and in a measure neutralises the beneficial effects of other improvements. The completion of the arcades belongs to the Commissioners of 1851, and notwithstanding the reluctance which the Council have naturally felt to press a body who had dealt with them so liberally, they have considered themselves called upon to make a most urgent appeal to the Commissioners on this subject.

There still remain structural works pressing for completion which belong to the Society to execute; such as the council-room portico, steps in the middle walk, a western entrance, &c.

The Council regret to have to announce the retirement of Dr. Lindley from the Secretaryship, which he has held so long with honour to himself and benefit to the Society. Last year he tendered his resignation, but was induced to withdraw it at the solicitation of the Council, on the ground that as he had supported the Society during its period of depression, so he should remain as one of its officials until the next summer (1862) should have crowned his labours with success. He has now repeated his resignation, and the Council have most reluctantly felt bound to comply with his wish, and accept it. He has been for forty-one years an officer of the Society, and during that period, to use his own words, he "has endeavoured to the best of his ability to promote its true interests as a great English association for the advancement of horticultural knowledge, until, through many changes and some adversity, it has at length gained a position of high eminence, and may be regarded as standing on a secure foundation."

The Council need not repeat the arrangements for the coming season which have been already made public. The chief alteration on those of last year is the non-admission of the public to the garden except on fête days and promenades, a restriction by which they trust that the comfort and quiet enjoyment of their garden by the Fellows and their friends will be materially increased.

The Council cannot conclude this report without congratulating the Fellows on the continued interest the Queen takes in the Society and its proceedings. Constant reports of its progress have been furnished to Her Majesty throughout the season, and she has in various ways marked the interest she has taken in them.

DOES APOTHEME ENTER PLANTS?

YOUR correspondent says he is no worse than the writer in the *Times*, who wrote anonymously, and to whom his paper was a reply; but, after all, there are few, if any, who consider the *Times* immaculate in any way, and "can two blacks make a white?" Thomson's "Vegetable Chemistry," nor any other book, cannot prove to me or any other man, that apotheme never entered into the roots of plants, because it is a mere conjecture based upon a few imperfect experiments. A million analyses would give very uncertain data after all, in such a very intricate matter. How can we ever know that apotheme does not enter the roots and get instantly resolved into its elements, which as rapidly form new combinations of fluids? How can we ever hope to detect with accuracy such minute and instantaneous movements? and is it not presumption in any one to assert that a fact has been established on such crude evidence? I do not think it is far out of the way to say, that there is an irreverent way of searching into the mysteries of Nature, and that science prosecuted in such a fashion "is falsely so called."—WM. BAXTER SMITH.

["I return Mr. Smith's letter; and not feeling that either the writer in the *Times* or myself are necessarily 'black' because we write anonymously on a scientific subject, nor that I am guilty of 'irreverence' in believing that analytical chemistry detects truths, I retain my incognito, and believe in the accuracy of the published experiments of Prout, Robiquet, and others, rather than in an opinion founded upon no evidence at all. No one can object to Mr. Smith entertaining his own opinion, and I certainly shall not charge him with 'irreverence,' nor even with deficient logic, in preferring no experiments to a few. I regret, however, that Mr. Smith would not be convinced even by 'a million experiments,' because conviction in natural philosophy, contrary to a foregone conclusion, must with him be impossible, and Lord Bacon and others must have pointed out a wrong road to knowledge when they told us to try experiments, or, as he termed it, 'asking questions of Nature.'—J."]

VEGETABLE TERATOLOGY—ABNORMAL CALCEOLARIAS.

BY DR. MORREN, PROFESSOR OF BOTANY IN THE UNIVERSITY OF LIÈGE.

THE Abbé Van Oyen, professor of physical and natural sciences of St. Trond, sent me a collection of very remarkable Calceolarias, amongst which two forms of the greatest interest were carefully preserved. The Abbé truly observed that it was desirable not to forget those extremely rare cases in which Nature sometimes works, not in violation of her laws, but in deviation, so to speak, of her most common habits. These remarkable structures are indeed revelations, the interpretation of which ought not to be neglected.

M. Moquin-Tandon, in his classification of vegetable monstrosities, forms a class in which the deviation of the specific type is connected with the form. These deviations are of two kinds: they are either changed from one organ into another, and then they constitute *metamorphoses*, or they are alterations which, being irregular, become *deformations*; or, being regular, constitute *Pelorias*.

M. Van Oyen's pelorias of the Calceolaria were produced by some garden varieties of corymbosa, crossed first by pendula, the resulting varieties subsequently intermingled. An analogous form of peloria was seen in 1833 by M. de Chamisso, in the Calceolaria rugosa, and later by Guillemain. The specimen of M. Van Oyen differs from these, chiefly by its great size, colour,

and form: it forms the third example of the kind which has been recorded.

The Calceolaria is, as is known, a scrophulariaceous plant, having normally an equally divided four-parted calyx, and a hypogynous corolla formed of a very short tube, and a limb of two lips, the superior one short, truncated and rounded, entire; the inferior very large, prolonged in the form of a slipper, and concave. The flower is furnished with two stamens, inserted on the tube of the corolla, scarcely exerted; the anthers bilocular, the cells separate, divaricate, one often sterile. The ovary is bilocular; the placentas multi-ovuled; the style simple, the stigmata pointed. Such is the type of the genuine flower. The following is a description of the peloria of Van Oyen:—Two flowers alike normal grew to the right and left of the summit of the floral branch. This summit was itself terminated by a pelorised flower, which measured, not half an inch long, like that of Guillemain, but nearly 4 inches. It was not, as may be seen from the figure, a dwarf monster. The calyx was conformable to the normal flower. The corolla had the form of a



Rhenish wine-flask, much elongated, straight at both extremities, inflated at the middle, the part towards the summit being contracted like the neck of a bottle; the summit of the corolla itself was still further contracted, and tapered in the form of the mouthpiece of a flute, where it split in two oval openings. The corolla, when opened, presented no trace of stamens, only the pistil of regular form was placed at its base, and had its style curved to one side. The colour is not less remarkable: on the ordinary flowers of this variety of Calceolaria, the base is straw-colour, and there is a red tinge visible at the inside, the internal cuticle being coloured red; the inferior lip is coloured with light red, but here it is the outer skin that is coloured. Now, in this monstrosity the base of the corolla presented at first a yellow zone; then a broad red band in the interior, proceeding from the coloured part of the internal skin; then came a zone of pure yellow, and at the contracted part the outer skin was coloured with red; and at last the small narrow terminal beak was of a rich yellow.

The base of the bottle-shaped corolla, it therefore appears, represented the throat of the two-lipped normal corolla, and the conical end represented the inferior lip. The hypertrophy of the bottle-shaped corolla is evidently explained by the resorption of all the male organs. In the peloria of Guillemain, which only measured about half an inch, there was, however, also a complete absence of stamens. Is this absence the condition of the regularity of arrangement of the bilabiate flower of

Calceolarias? The three cases noticed would seem to establish this view. According to this state of things, this pelorisation would seem to be a disposition of parts in a regular form; for the Calceolaria, having the flower bilabiate and slippered, is irregular, and the bottle-shaped peloria is a regular form, with the exception of its extreme beak. Yet, if properly considered, the pelorisation is not a regular disposition of parts. Such an arrangement of a Calceolaria would consist of a central pistil, five stamens, a rotate corolla, with five lobes alternating with the stamens, and a calyx with five teeth alternating with the corolla. Then the Calceolaria would pass from the family of Scrophulariaceæ into that of Solanaceæ, and the flower would realise its regular type, its native beauty; for it cannot be denied that beauty results from symmetry, and symmetry is a disposition founded on regularity, or a harmonious relation of numbers, parts, and form. It is a remarkable law of Nature that families that are irregular may return by these monstrous forms to their regular families; while we never see a regular flower realise the structure of an irregular one.

The peloria of Van Oyen does not show the Calceolaria to return to the type of the Solanaceæ, but descends still lower, and realises a still stranger form and one which is opposed to nature—an anandrous form: consequently unfitted to perpetuate itself. In this respect it is a monster in the fullest sense of the term, but one full of instruction.



Another monstrosity, also sent me by M. Van Oyen, consisted in a growing-together of two corollas; this occurred along with normal regularity of the calyx. The corolla was bicalceiferous, having three stamens all fertile, one of which was placed at the junction of the two inferior lips: the ovary is normally conformable, and the calceiform lip was furnished with a lobe turning inwards. This form of abnormal development has not yet been recorded in morphological works. It is, I believe, a true junction of flowers, complicated by the resorption of the totality of the superior lip, by the non-development of the double calyx, and the resorption of one of the four stamens which should have been developed. This morphological form may, perhaps, some day lead to the determination of the real cause of synanthous developments.

DATURA WRIGHTII.

I BEG to say a few words upon the treatment of this plant, as I am sure it will fully repay any one for the little trouble its cultivation requires.

First of all let me observe that it is generally, in fact in all cases, except by Messrs. E. G. Henderson & Son, described as an annual, and as requiring out-door culture. This is quite a mistake, as it is a shrub requiring a cool greenhouse or conservatory to bring it to perfection.

Two years ago I obtained a packet of seed from Messrs. E. G. Henderson, St. John's Wood, and sowed in March in a gentle heat. As soon as the seedlings were large enough to handle I put them into thumb-pots, and potted them on as they required it in a rich loamy soil. By August I had them established in eight-inch pots with a very nice show of bloom. After blooming, about the first week in October, I left off watering, and allowed them to go to rest, placing them on dry shelves during the winter. Early in the year, about the latter part of February, I shook the mould off the tubers, trimmed them, and put them into pots smaller than those in which they bloomed, so as to allow of repotting if required. By May they required repotting, and I gave them their last shift, some in eight-inch pots and some in larger (those in the eight-inch pots bloomed most profusely); and, as soon as they began to grow again, watered well and frequently with liquid manure, of which they will imbibe a large

quantity, not forgetting a frequent syringing, not on the blooms, to keep down red spider.

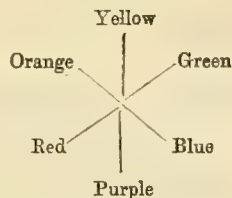
During July, August, and September I had a magnificent show of bloom, some of them 7 inches long and 5½ inches across, trumpet-shaped, and of a clear white shaded off to the edges, which were of a delicate mauve. I am quite certain I had from eighty to a hundred blooms on a plant during the season, generally three or four open at one time, and giving-off a strong magnolia-like perfume.

Datura chlorantha recurvis has special mention in most catalogues, but I really must say I would not give it house-room, for the blooms cannot compare with those of *Wrightii*.—GEO. M. BURTON, Southtown, Great Yarmouth.

HARMONY OF COLOURS.

THE harmonies of colours are as follows:—The three primary colours—yellow, red, blue; the three secondary colours—orange, purple, green, formed of combinations of the primaries, thus—yellow and red, or orange; red and blue, or purple; blue and yellow, or green. Each primary requires its complementary secondary—that is, the eye when it sees a primary, as, for instance, yellow, requires the secondary colour which contains the other two primaries, red and blue—namely, purple.

Hence, it follows, that in decoration it is absolutely necessary that yellow should be balanced by purple, red by green, and blue by orange. The accompanying figure shows the circle of colours, the lines connecting the proper contrasting or complementary colours.



It is also to be noted that cold colours, or those containing blue, should be used in larger quantities than warm colours, or those containing no blue.—(*Irish Farmer's Gazette*.)

WHAT DESTROYS CROCUSES?

I SEE in the "Journal" of the 10th instant, W. W. Bennett complaining of his *Crocus*-borders being destroyed. I am sorry to say he is not alone in that misfortune. I have a walk upwards of a hundred yards long, with border on each side planted with *Crocuses*, *Snowdrops*, and other bulbs. The former have been destroyed to a great extent. On first noticing the evil I attributed it to field mice, and had one side-walk thickly covered with cuttings from Gooseberry bushes. The depredators soon evacuated that side, but attacked the other side with double force, which confirmed my opinion as to their being mice. I have caught some in traps. I hardly think sparrows could make such holes, as the ground is a very adhesive clay.

But permit me to state what I have often found to be the quickest remedy—that is, if Mr. Bennett is not, like myself, troubled with too many predatory animals. I take a small piece of butter, or any other greasy substance, mix it with a little arsenic, spread thinly over a piece of bread, and lay it at certain distances. I shall be glad to hear from any of your correspondents any other remedy.—R. HOLLIDAY, Gardener to J. Allison, Esq.

WEEDS ON WALKS.

I FULLY expected this query of yours as to the effects of the acid solution upon boots and shoes, as it was the one that immediately suggested itself to my mind on my first experiment. By taking the following precautions, however, I have never found any of the bad effects suggested.

I fix upon a fine evening after a dry day, and, beginning at one end of the path, water away, stepping backwards slowly, and avoiding splashing. The weeds being thirsty soon absorb the solution, and what little remains on the stones and gravel the night-dew washes off, so that next morning all danger to boots and shoes is over. I have now tried it many times (as I

had formerly grass-edgings, which from constantly sowing fresh seeds necessitated fresh applications), and have every reason to be satisfied with it.

Should the operator spill a little on his clothes a little ammonia, such as a pinch of smelling-salts in water, will make all right again.

It also exterminates worms. The watering-pot and pail must, of course, be well washed afterwards, and be kept well painted. —LEX.

THE SEASON IN CORNWALL.

WE have had so far an exceedingly mild winter in this county (Cornwall), and it may interest you, perhaps, to know how far our spring is advanced. Yellow Crocuses are in full flower, and have been for two or three weeks; Hyacinths are in very forward bud—two forward a great deal for security from frost; the blue Squill covers the ground with its starry blossoms. In fact, our borders are gay with the snow white *Iberis semperflorens* (at least, I believe that is the correct name of the pretty little perennial which the people call "Mountain of Light"), scarlet double Daisy, and yellow and purple Crocuses, arranged alternately, and all in full flower at this time. By the way, I have omitted the Snowdrop from the above list, which contributes in no small degree to the general gaiety of the border; and last, though far from being least in beauty, the bright blue Squill. Some *Humeas*, which have been out all the winter, look pretty well, though rather "leggy," and Scarlet *Geraniums*, *Calceolaria floribunda*, and all sorts of *Verbenas*, are looking strong and healthy, some against a south wall, others in the beds.—S. L. J., *Cornwall*.

PREVENTING THE GOOSEBERRY CATERPILLAR.

A NEIGHBOUR told me the other day, when talking about these pests, that in the month of March, on some damp morning he dusts the bushes all over, and beneath them, with soot. The bushes being damp the soot adheres to the wood, leaving a sooty smell, which the moths and caterpillars do not like. By these means he says he is never troubled with them. As it is so simple and within the reach of everybody, I, for one shall test the truth of the plan, leaving some bushes unscooted in the same bed. I hope others will try it. It would be a great boon to us if we could obtain some sure preventive.—G. HOLMES.

TREATMENT OF APRICOT TREES IN BLOOM.

I VENTURE to suggest that our veterans, Messrs. Rivers and Pearson, are both right, but have overlooked the very important fact of the influence of the atmosphere. Please to observe, that in showery weather, such as Mr. Pearson named as a fine time for setting the fruit, the barometer would be at 29.20, or thereabouts, and the air consequently light, so that the pollen would disperse easily; in fact, giving us the dry atmosphere required by Mr. Rivers. Should this solve the difficulty, I should hardly think you will consider your space wasted.—GEORGE BURETON.

CONIFERS IN IRELAND.

I FEEL great pleasure in giving my experience with regard to the *Pinuses* inquired about by Mr. Robson.

In so doing, perhaps, I cannot be more clear than by stating the dimensions of a few Silver Firs now standing quite adjacent to the Castle, and which, according to most reliable information, were planted about the year 1803, and at that time were very small, having been brought from Scotland by a Mr. Webb, landscape-gardener, in his travelling-bag. The height is taken from the ground to the top of the leaders; the girth, at 3 feet from the ground level.

GIRTH.				HEIGHT.			
1.	8	feet	3 inches.	...	...	...	66 feet 2 inches.
2.	3	"	4	...	...	...	70 "
3.	9	"	6	...	...	...	73 "
4.	7	"	4	...	...	...	67 "
5.	3	"	0	...	...	...	68 "
6.	9	"	3	...	...	...	75 "

These are fair specimens from among a considerable number growing singly, or in groups of not more than six in a group.

Chiefly surrounded by Oak and Sweet Chestnut, and under-cover for game, Larch, Spruce, and Scotch Fir have grown equally well.

With respect to the newer kinds, those here are of very recent planting. In looking over the growth of 1862, I find the leaders of several as follows.

<i>Pinus excelsa</i> ...	20 inches.	<i>Abies canadensis</i> ...	12 inches.
<i>insignis</i> ...	36 "	<i>Nordmanniana</i> ...	14 "
<i>austriaca</i> ...	34 "	<i>Wellingtonia gigantea</i> ...	22 "
<i>Abies Douglasi</i> ...	24 "	<i>Cupressus Lambertiana</i> ...	60 "

Cedrus, *Libocedrus*, *Thuja*, and *Taxus*, all do well in sheltered situations. Among all the Conifers, here and around here, I find that the south-west wind at this season of the year browns the leaves, causing a great check to the plants in spring, unless they are partially sheltered by other trees, or something, especially while young; while a breeze from the north appears to have very little effect upon them.

Perhaps I should state that the locality lies between two chains of mountains leading east and west, so that the wind comes very strong from the south-west.—GEORGE BECKETT, *Shanbally Clogheen, Ireland*.

GRAFTING DEODARS ON THE LARCH.

THERE was a mistake in the description of Woodstock, concerning a Deodar grafted on the Larch, which it is necessary to rectify. It was planted some thirty-seven years ago, and five years ago was nearly 34 feet in height. It grew somewhat spindly, was deficient in robustness, and shed its leaves partially in the autumn. On examining the roots they were found to be unhealthy, and a closer examination proved that the tree was grafted on the Larch. No improvement taking place, Col. Tighe at length ordered the tree to be cut down, and when the roots were grubbed-up they were found to be affected with a bad case of the larch rot. We say nothing on the theory of grafting, but the above case was misapprehended, and, therefore, we give this statement of the facts.—E. F.

PRUNING VINES.

I HAVE a vinery about 60 feet long by 14 feet wide containing at the warmest end Muscats, and at the cool end Black Hamburghs. The Vines are about six years old. For the last four years I have had fair average crops. Being desirous of keeping them back as long as possible, I have deferred pruning them, and the question now arises, How am I to prune them? The wood is well ripened and the thickness of one's little finger, but the eyes close at home are by no means bold. The fourth and fifth are very plump and evidently fruit-buds. By pruning down to the fifth eye the spurs soon become too long; but should I prune down to two eyes? I am afraid there would be little or no fruit, at least, if I am to believe that the small eyes are generally unfruitful. The Muscat eyes are bold throughout, and I prune short accordingly.—D. W.

[If your wood is well ripened you may safely prune back to the small buds. Everything depends on the ripening of the wood. A crop, however, is a better thing than any adherence to a system, and if there were any doubts we would leave a portion of the wood in the short-rod style. The prominent pods will be best ripened; but the small buds at the base, if fully ripened, will be equally fruitful and come strong if those before them are removed. Were we in your case and in any doubt, we would prune for a crop and leave plenty of wood; by stopping the shoots you can make the back buds break, and the shoots from these you can keep for next year's spurs. Your delaying the pruning will not at all serve your purpose in securing late Grapes—that must depend on keeping the Vines cool. If you have forced previously, the pruning should not be delayed, or you may have bleeding. When once a Vine is in leaf you may prune as you like, provided you do not take too much away at a time so as to weaken the energies of the plant.]

FEATHERED HELPS IN A GARDEN.

FOR want of a better phrase I thus designate a subject upon which some practical enlightenment will oblige me. I am led to it by the references to bantams in a garden, and especially by your own remark, that a particular sort does very little harm in a garden, which somewhat surprises me.

I presume that if poultry did not scratch and tear everything, they would do very much good by destroying insects of various sorts, and, I presume, that much good may be done by birds, judiciously chosen, in that way. Nothing like hand-picking in the main; but how many small insects are there that cannot be so dealt with—ants, for instance, which abound occasionally. If bantams could be kept without injuring growing crops they would be very handy. It is said that guinea fowls do not scratch, and are, therefore, good helps, as they swallow everything living. Then, again, some fancy a domesticated sea gull for the purpose, the hawk and the owl, too, are useful so far as mice; and, probably snails are concerned; and an observer of the habits of the birds, who has sat by the hour and watched starlings bring to their nest a slug or snail every three minutes for hours together, may well think it possible that a pair of those birds domesticated, and with a wing out, might be very useful. But practical gardeners must have some experience upon such a matter, for it is difficult to believe that the references to birds' habits scattered through books of natural history, have not been somehow gathered up for practical purposes by practical men. I have been greatly amused by seeing a pair of ducks hunt a piece of Box-border for snails or slugs, and was very much amused once by seeing a house sparrow chase, and with much difficulty catch, a butterfly, in Chancery Lane—a circumstance brought to my recollection by a suggestion in your pages that the house sparrow will not take insects. If the subject has not been already treated on in your paper, I fancy it is one upon which an article might be very usefully written.—H.

[We refrain from making any reply to this inquiry, because we should like to have all the information upon the subject which our readers will be kind enough to send us. Any one who has kept successfully a feathered help of any species in a garden, will oblige us much by sending particulars of the vermin it destroyed, what damage it did, whether it required a constant supply of water, and any other particulars necessary for its successful management.—EDS. J. or H.]

APPLE OF AMASSIA.

AMONGST the fruits exhibited at the Society's Great International Show in October, was an Apple bearing the name of the "Apple of Amassia," sent by Mr. Edward B. B. Barker, H.M. Consul at Samsoun.

It is fully medium size. Its general form is roundish, without angles; eye partially open in an evenly rounded depression; the stalk, of medium length and thickness, is deeply inserted in a regularly formed, rather narrow cavity. The skin is glossy, pale yellow on the shaded side, with a delicate blush next the sun. Flesh white, juicy, very sweet; but the specimens tried did not possess that rich brisk flavour which is considered requisite in what would be considered a good dessert Apple in this country. It is fit for use in October. In appearance it resembles the Mela Carla Apple, described and figured in "Horticultural Transactions," vol. vii., page 259, but the Apple of Amassia seems to ripen earlier.

In answer to inquiries addressed to him on the subject of this Apple, Mr. Barker has replied:—

"This variety has long been known at Amassia, but in no other town or district of Asia Minor, or anywhere else that I can learn.

"There are fourteen other varieties of Apples at Amassia, all inferior in every respect; proving that it does not owe its superiority to the climate or soil, although these last may be predisposing causes to its perfection.

"It is propagated by grafting; the fruit invariably the same. Young trees produce, however, finer fruit than the very old ones.

"It is always a standard at Amassia, and grows to the height of 15 feet.

"It is a great bearer, and a vigorous healthy tree.

"There is every reason to believe that this variety is indigenous to the town and gardens of Amassia; no one of the present generation remembers its having been introduced; and this is not a likely thing to have occurred in this part of the East. I have seen Apples from all the towns in Asia Minor and Syria, all very inferior. The moment I tasted it, I wrote and procured scions for grafts, and sent them at two different times to my gardener at Suedia, in Syria, and the more I know of this Apple the more I appreciate its qualities, which are these:—

"1, High colour; 2, Sweetness, with quite sufficient acidity

to be agreeable; 3, Plenty of juice when not over-ripe; 4, Fragrant perfume, in which most Apples are deficient; 5, Crispness without hardness, which enables it to travel to great distances without injury.

"It flowers and ripens at the same time as other Apples at Amassia, flowering in April and ripening in September and October; and would probably do the same in England.

"In regard to the name of this variety, it is called at Amassia Muskett or Musk Apple. Four years ago a Swiss merchant established at Amassia, sent a box of these Apples to Bâle in Switzerland, to his brother. At a meeting of the Pomological Society in that city, some were exhibited, and they were called Rose Apples of Asia (*Asiatischer Rosenapfel*.) It has been remarked that the flesh of some of these Apples, when ripe, is of a slight rose colour. I have not learnt of its having before or since been sent to Europe farther than to Constantinople, to which city about a hundred boxes are sent yearly, principally as presents. Its travelling so well is a remarkable feature. If I could have gathered the Apples here (Samsoun) at this port, they would have reached you in fine condition; but they had to travel on horseback (three days journey, about ninety miles) before they reached my hands, over very bad roads.

"Amassia is on land much elevated above the level of the sea, and consequently very cold in winter, and very hot in summer. The soil is calcareous, mixed with fine sand; exceedingly dry in summer, and the trees are watered by hydraulic wheels. The trees are never pruned nor manured; indeed no care whatever is taken of them, except watering them—an absolute necessity in the great heats of summer; but they would not require that in England.

"I will send you scions for grafting, so as to be in England in February or March next, by two expeditions—by steamer from Constantinople *via* Liverpool, by sea, and by the overland route, *via* Vienna, through the Foreign Office, by the messenger. They will be cut in January, during the coldest weather, so as to insure their freshness till May.

"I shall be very happy at all times to be able to give you any other information, if required, having inherited from my late father, John Barker, Esq., a great taste for horticulture, and having had some little experience in these eastern climates."

So far as beauty is concerned, the Apples exhibited at the Show in October bore out all Mr. Barker's encomiums, but the taste had been deteriorated by keeping and carriage. It had become too sweet, and the Apple had lost the crispness of which he speaks. But if the grafts which he promises prosper, we shall by-and-by have an opportunity of testing its value more fairly.—(*Proceedings of the Royal Horticultural Society*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

TAKE advantage of dry days to stir the surface of the ground among growing crops, and to keep down weeds. *Cabbage*, sow early sorts and a few Red on a warm border. *Carrots*, make a sowing of Early Horn. *Cauliflower*, make a fresh sowing in a frame, and prick out those already up. *Celery*, another sowing may now be made in heat. *Dwarf Kidney Beans*, sow a few Early White, Negro, or Dun-coloured in boxes for planting-out. *Lettuce*, sow Cos, when required, in warm situations. The beds to be looked over and blanks made good, after which they should receive a careful hoeing, not too deep, and have ashes, sharp sand, or sawdust strewn thickly among their stems. A similar application to the stems of Peas and Beans will be some protection from the attacks of slugs. *Onions*, take advantage of the first fine day with the ground in working-order to put in the main crop. Select a piece of land in good condition; and if the surface is not naturally firm, render it so before sowing by treading or rolling. *Parsnips*, prepare the ground by trenching or deep digging, and sow.

FLOWER GARDEN.

Proceed with Rose-pruning. The late mild weather has already advanced the buds of many sorts; an exception, however, may be made of Roses recently moved. Plant and lay Rhododendrons. Edgings required for flower-borders, such as Box, Thrift, &c., should at once be planted, and Box-edgings cut. Plant Pinks, Pansies, Wallflowers, Canterbury Bells, Foxgloves, Carnations, &c.

FRUIT GARDEN.

Proceed with pruning and nailing in favourable weather. If any planting still remain to be done, let it be performed as soon

as the ground is in a fit state for that purpose. Look to the Fig trees; prune and train those that require it, tying or bending the strong shoots down, which will induce them to push out a number of very short-jointed bearing shoots. Protect the blossom of wall-fruit trees. Fir boughs or straw ropes where Haythorn's hexagon netting or canvas cannot be obtained, should be employed to ward off the effects of frost. Clear away dead leaves from Strawberry plants.

STOVE.

Orchids will require an advance of heat, and unfailing attention in regard to atmospheric humidity. Look sharp after insects, the snails and slugs are very fond of the young tender buds at this period. Some Achimenes, Gloxinias, &c., to be set to work. Some of the Ipomæas, Echites, Pergularia, Stephanotis, &c., may be trimmed-in, disrooted if necessary, and plunged in a moderate bottom heat, using but little water until an active root-action takes place. Some of the Echites are easily rooted, and will endure a vast amount of drought.

GREENHOUSE AND CONSERVATORY.

Orange trees in tubs or pots to be carefully examined in order to ascertain whether or not their roots are in a healthy state, and those requiring more room should be shifted at once. When a shift cannot be conveniently given to large specimens, it is advisable to remove as much of the surface soil as can be done without injuring the roots, and replace it with a mixture of good turfy loam, ground bones, rotten cowdung, and sand. If they are infested with the scale or coccus family, apply with the engine clear soot water in a careful manner. Some of the hardwooded plants may now be propagated by cuttings where a gentle bottom heat can be kept up. Sow annuals for pot-blooming. Shift herbaceous Calceolarias when they fill their pots with roots, and keep them near the glass and well fumigated. Place Camellias past bloom in heat to make their growth. Shift Cinerarias freely, and fumigate often. Prune, pot, and start Fuchsias in a nice bottom heat if possible. Heaths to have plenty of air when not frosty, and shift any that have filled their pots with roots. Similar treatment is recommended for New Holland plants. Pelargoniums wanted to bloom early to be kept rather warm, and to be shifted into the pots in which they are to bloom. Keep those intended for late bloom closely stopped. Train the young shoots of climbers before they become entangled.

PITS AND FRAMES.

The plants in these structures will require to be carefully watched, as the warmth caused by the increased power of the sun in the daytime will most probably induce a too rapid progress at the expense of constitutional strength and vigour. It is, therefore, desirable to keep them as cool as may be found to be practicable, by allowing the free ingress of the external air. Anything like close confinement when the sun is shining on the pits and frames will certainly be injurious; at the same time, if the air is very keen and cutting, the lights must be opened on the side least exposed, and in such a manner as to prevent the cold draught from acting on the excited juices of the plants. Attend carefully to the stock of bedding plants, and get rooted cuttings potted-off as soon as they are in a fit state for that purpose, and encourage them with a gentle bottom heat and careful management to make quick growth, for after this there is no time to be lost with young stock. Sow Mignonette, Ten-week Stocks, Cockscombs, Balsams, and all tender and half-hardy annuals in heat.

W. KEANE.

DOINGS OF THE LAST WEEK.

FINE crispy mornings and bright days having come at length, regulated work accordingly, as far as possible, though necessity compelled us to do some work we would have preferred leaving to a rainy uncomfortable day. Wheeling in the hard mornings, turning soil during the day—that is, turning ridged-up ground topy-turvy, to give more of it the sweetening influence of the frost; charring heaps, and heating parings, scrapings, and other material, as covering, sufficiently hot to kill all the weeds, and burning as little even of Hollyhock-stalks as possible, as the charred, half-burned stems are much more valuable. The dry weather has been very useful for such work, and, therefore, much could be done with little labour.

KITCHEN GARDEN.

Put a little loose litter over Cauliflower hand-lights in the

coldest nights, turned broad leaves over Broccoli coming in, and had a little rough hay ready to place a handful over, if the frost got severe enough; sowed Carrots, Lettuce, and Cauliflower in a two-light box, to obtain just a little heat for them, the two latter to be pricked-out ultimately, to give room to the Carrots. Placed a foot of leaves over some Sea-kale in the open air, and that was pushing without more help than a cone of ashes. A good cone of ashes with these few leaves, will give an early cutting, without the bother of pots or boxes. The first are expensive affairs when there is not a handy man to wield the fork in looking for the heads. When there is little beside the ashes, it can all be done with the hand; or if a fork is used, the points will not have the chance of shivering the pots. The great point is to place no rank manure about such plants, or it will be no great credit at table to gardener or cook. Another matter is to cut it when from 4 to 6 inches in length, the elongated stems half a yard in length are little better than insipid juices. Took the first crops from the Mushroom-house, and put the plants in a cool shed, that they may be quite hardened before planting them again. This may be done at any time as respects the crowns with 3 or 4 inches attached, but the lesser roots cut up into pieces are as well stored in sand or dry earth until they begin to push. Placed some rotten rubbish-heap material over ground intended for Asparagus, as we could command nothing better; and when manure is scarce, after so far loosening the ground, it is well to keep the manurial matter near the surface, and add by top-dressing. Though Asparagus seed may be sown, and plantations made, we prefer planting Asparagus when it has sprung 2 inches, and keeping the roots moist, covered with moss or mat, so that no small fibres can be dried. Planted in that state of growth, and with that care, it is rarely that a single plant will fail.

Potted-off some more Dwarf Kidney Beans that were sown thickly in a box, putting five plants into a seven or eight-inch pot, using soil previously aired and warmed, and warm water for watering, the two last simple matters being more necessary to success than many people imagine. We have nothing to say against sowing the Beans in pots at once, where there is plenty of room, but that we are scarce of; and, therefore, by sowing in a box, we have two or three lights at liberty for several weeks, and, besides, the transplanting tends to make the plants more robust and fruitful. Potted Cucumbers and Melons in dung-and-leaf bed, prepared bed for Cucumbers, swept over Mushroom-beds, and cleared out as manure for flower-beds the Mushroom-beds that did such good service in the shed in the summer and autumn. We find that the droppings of horses are now so much wanted for giving a little extra heat to tree leaves, that our next bed for Mushrooms must consist chiefly of these tree leaves, with a few inches of dung on the surface.

FRUIT GARDEN.

The tomtits have commenced their visits since the frosty mornings; and we should like those who benevolently consider that killing one of the pretty little fellows occasionally is nothing but a horrid murder, to notice how soon, if unmolested, two or three of them will clear a Gooseberry-quarter for you, or leave a row of Pears little else than bare poles. However, were it not for such wholesale work we should be sorry to meddle with them, for we are well aware they do good as well as mischief.

If preserves for game are maintained as they are in some places, we prophesy that kitchen gardens close to them will have to be netted all over, if anything is to be expected from them, unless there are some battues every now and then for small birds, as well as for hares and pheasants. A slight net of wire stretched from wall to wall in an enclosed garden would not only be a new idea, but we are sure that under such circumstances of high preserving, it would also be the most economical in the end. In many places already it would be perfect folly to get a row of Peas up without protecting them with ridges of wire-netting; and what small birds do for Peas, partridges and pheasants will soon do for Broccoli, Cauliflowers, &c. We know that frequently in the early summer we might wish, and wish long enough, for nice dishes of young Peas to please visiting company, if we did not set a boy with tongue clappers and wooden clappers to keep the winged tribe at a little distance, as these sounds, discordant though they be, are not so shocking to nervous people as the report of a gun in a garden—in fact, the latter is quite out of place in a garden if it could be avoided. It is very trying to the patience when you expect to gather a superb dish of Peas or some first-rate Strawberries, to find that the birds have shelled the first

without your leave, and carried off or dug their bills into the best of the latter. Who will invent the most suitable cover-all for a garden, that will let plenty of heat and light through and keep out the smallest birds and the larger insects, just as we find it necessary to do so?

We may as well here allude to another matter growing out of this high-preserving question. In many gardens there is a difficulty in finding pea-stakes, and when found they seldom last good for more than a year, and then come in as fuel for fire-lighting. Many for want of them are obliged to grow low Peas, or allow them to run over the ground without stakes at all; but in such circumstances we believe there is a loss as respects quantity and quality. We have several inquiries on the subject, and see nothing better than iron supports with holes for wires to run through; but though these are used in some places, we feel certain that the person who manufactures an article that will be somewhat economical in price, and which will be easily moveable so as to be taken from and to a shed as desired, or, in other words, put up and taken down with little trouble, will command a large sale for the article. Strained wire fences are now getting common for espalier trees, Raspberries, and even Gooseberries and Currants, as when the two latter are trained flat fine fruit is not only obtained but the ground between can be cropped with other things.

We seem, however, to have lost sight of the birds. Well, as yet we have not done more than rough-prune Currants and Gooseberries, thinking it better to leave the final looking-over until we see how the birds and we agree as to the right quantity that shall be left to us. Meanwhile, to prevent their taking a delicious morsel, we mix-up a tub of rather thick wash, formed of soapuds and about equal parts of lime and soot, and double parts of clay and cowdung, which, when thoroughly blended and mixed, will pass easily through the nozzle of an old syringe. This, with a handful of salt to every eight gallons or so, is squirted over the bushes and the forwardest Pears, and sticks on pretty well by the help of the clay and the cowdung; and should continued rains come before the buds are safe we must just repeat the operation, and try thread, looking-glass, pieces of tin suspended, and all the rest of it. But so long as the buds are thus crusted they will hardly be touched by any bird that has any pretension to epicurism.

Strawberries in pots that are standing in beds and intended for forcing will need looking after, as, if they get too dry, the flower-buds will be apt to perish. We think a few of ours have done so, as the air has been very drying of late. If the frost should come much more severe, however, it will be advisable to cover them up at night after such watering.

Gave a little air early in the morning to Peach-house in bloom, increasing it gradually to mid-day, and waived a broad board quickly near the blossoms to disperse the fertilising pollen. Shut-up pretty early in the afternoon, so as to do with as little fire heat as possible. Temperature at night ranging from 45° to 50°; during the day with sun from 70° to 85°. Temperature of the first vinery breaking, 60° at night, air early, and heat allowed to rise with sun to 80° or 85°.

The most of the bedding plants are now moved from the Peach-house and from other places where heat is more required for other purposes. To find room for them we were forced to cut the remainder of the Grapes in the late vinery, keeping a good bit of the shoot with them, and sticking the shoots into moist soil in a moveable box, and covering the box with dry moss and clean paper. This suited our purpose best on the present occasion, though we would give the preference to the plan mentioned by Mr. Thomson of sticking the shoots into a beetroot, and allowing the bunch to hang over a shelf in a dry cool place.

Now, as to the Vines, it is right that mischances should be noted as well as successes. In cutting a young Vine we found that the stem came to us. Unfortunately, against our own wish on such a subject, the Vines are planted outside the house and brought in through a hole in the front wall, a little moss being placed round the stem in the hole. Now, just where the stem entered the hole it seemed to have been gnawed through—in fact, but for examining it carefully, it might have been supposed to be cut through. But the most curious thing is that not a vestige of the stem could be found from the cut or nibbled part, and no remains of nibbled wood, and though we searched carefully not a bit of the stem could be found, or even the larger roots, though we found the smaller ones in the border. A young Vine in an earlier house was found exactly in the same

way, not a vestige of stem from the cut part, but all gone, and no signs of nibbling, such as sawdust-like pieces of wood left. The whole of the stem seemed to be gone, and yet Grapes, which one would have thought more tempting, were left untouched. What made me conclude that mice were the destroyers was the following fact: A rather old Vine had not swelled its berries to the usual size in the autumn, and on examining the stem in the hole in the wall it bore traces of biting and injury for fully halfway round. Mr. Mouse must now be looked after; but, seeing the Grapes untouched, and seeds drying in the house quite safe, we never thought of looking after the stems that went through the wall. Do any of your readers know of a case of such wholesale destruction of young stems? Not a bit could we find, nor even a root of any size. Out of doors we found some young Apple trees that were fast going the same way. The nibbling had commenced at the surface of the ground, and when discovered the stems and most of the larger roots proceeding from the collar were nearly gone. In these cases, too, the stems farther up were not touched.

PLANTS, PROPAGATING, &c.

Much the same as last week. As soon as the late vinery is all thoroughly cleaned, we will fill every available spot with plants and keep them and Vines as cool as possible. For this purpose we will bring all the Vines near the front of the house that we may not only give plenty of air, but shade the Vines too if necessary.—R. F.

TRADE CATALOGUES RECEIVED.

Ambrose Verschaffelt, 50, Rue du Chaume, Ghent. *Spring Catalogue of Stove, Greenhouse, and Hardy Plants, &c.* 1863.
C. B. Saunders, Cæsarean Nurseries, St. Saviour's, Jersey. *General Catalogue of Fruit Trees. Catalogue of Trees and Shrubs. Select List of Cape Bulbs, Tuberous Roots, &c. List of Azaleas, Camellias, Dahlias, Fuchsias, Geraniums, &c.*

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

PLANTING FLOWER-BEDS (*Cruceiferus*).—If we could make an exception in favour of any one, it should be in the case of so staunch a supporter; but we cannot make any exception. If you will arrange the plants in the beds, and send us an outline of the beds and how you propose to plant them, we will point out what we consider mistakes, if there are any. No one can plant beds the situation of which he has not seen.

PASTURE GRASSES FOR QUEENSLAND (*C. C.*).—We should send Crested Dog's-Tail, Hardish Fescue, Wood Meadow Grass, Evergreen Meadow Grass, White Clover, and Suckling Clover. Calico soaked in linseed oil would be liable to spontaneous combustion on the voyage. The only remedy would be to have it packed in tin-lined boxes, and soldered-down to exclude the air.

BUDDING PLUMS ON SLOES (*G. Carpenter*).—For five postage stamps you can have free by post from our office, "Fruit-Gardening for the Many." It contains directions for both grafting and budding. Plums grafted on sloe-stocks do not do well. Either sulphuric acid or caustic potash will render your refuse bones available as manure. The potash mode is preferable, being not so liable to cause injuries during the crumbling-down process.

ZINC-LINED BOXES, &c. (*A Subscriber*).—We have used zinc as a lining both for plant-boxes and water-tanks, without observing that it injured the plants.

ITALIAN GOURD SEED (*A Subscriber, Blackheath*).—We know of no reason why the plants should not do as well as other Gourds and Cucumbers, if ridged-out at the usual season.

ROSE ANNUAL (*W. H. M.*).—We have no information upon the subject.

DATE PALM PARASITE (*Date Palm*).—The little "seeds" you mention are the convex hardened bodies of the females of a small species of Coccus, covered with a thin pellicle of white waxy secretion, giving them a fungus-like appearance. Some of the females were shrivelled-up, having already deposited their eggs, but others were still filled with eggs, so that the tree must be cleared of them at once or it will be destroyed.—W.

PRUNING ROSES (M. H.).—If the weather continue mild it would be advisable to prune at once, but if frost set in, delaying vegetation, you had better wait until the frost be past. It is possible we may have more water yet than we have had, and it would be as well to wait and see the result. The progress of vegetation will be stopped if it continue cold, and the pruning could be done just before growth commences again.

VERONICA (S. L. J.).—Your specimen seems a variety of *V. Andersonii*, but they differ so much that we cannot positively say; and as they seed freely and sow themselves, and in mild autumn flower admirably, only varieties of unusual merit have of late years been distinguished by name. We expect it will do remarkably well in Cornwall. We know it to be quite at home in Jersey.

TROPEOLUM TUBEROSUM (Idem).—By all means occupy your hotbed with something better than these, which do pretty well against any dry wall. The more poor the soil the more likely they are to bloom, and we have sometimes planted them in flower-pots to check their growth. But it is generally late when they bloom, so that they have fallen into disrepute. In hot, dry seasons they bloom better; but such kinds as *Tropæolum pentaphyllum* and *T. brachyceras* have been more popular of late years.

TRITOMA SEEDLINGS (Idem).—You cannot do better than plant your seedlings amongst your American plants in bog earth, especially if the soil is not already fully occupied by the roots of *Rhododendrons*, &c. If the latter be the case, plant them elsewhere, as they ought to have a good depth of earth to themselves, and the bulbs will advance apace. Do not plant them too thickly.

IVY AND ROSES AGAINST A FENCE (A. R. H.).—Plant the Ivy out of pots 2 feet apart. You can buy it so growing 6 or 7 feet high. In front grow the Roses in large pots or butter-krinks buried in the border close to the fence. *Felicité perpetuelle*, *Myrianthes*, *Princess Maria*, and *Princess Louise* will do well for the purpose. Train the Ivy against the fence, and the Roses in front of the Ivy. Both the Ivy and the Roses will be benefited in summer by heavy waterings overhead from the garden engine, and by manure-waterings to the roots.

DECORATING PUBLIC ROOMS (J. O. G.).—You will find your inquiries answered in our paper of to-day by an article from Mr. Robson, which we think will meet your case, and that of others.

GRAFTING PEARS ON ASH STOCKS (J. W. P.).—Your friend has confounded the common Ash with the Mountain Ash. Pear scions unite freely with stocks of the latter, but they will not unite to the common Ash.

PLANTS FOR THE SEASIDE (A. A.).—We fear the starving character of the soil on your north-west coast will not suit many of our ordinary evergreens, but we have seen the *Laurestinus* and *Amorpha japonica* do well in the neighbourhood of Plymouth within reach of the spray. If, however, these will not do, try the *Tamarix* as you are advised, and *Pinus maritima*, and the various herbaceous plants which will endure the sea air, as *Thrift*, *Fennel*, *Evergreen Iberis*, *Alyssum*, and the like; but avoid the comifers, excepting the above. In deciduous trees the Sycamore stands as well as any. Perhaps some of our correspondents will give us their experience on coast vegetation.

DISTINGUISHING THE STOCKS OF FRUIT TREES (J. M. C.).—A man well versed in such matters might, perhaps, be able to tell you if he saw the trees; but he could not explain on paper the mode for you to do it, especially with young trees. Generally speaking, Free Stocks grow and thicken faster than the graft, while Quince and Paradise Stocks are the reverse; but this is not discernible in the young tree so well as in the more adult one. Cutting the bark of old trees of the kinds of stocks named, and comparing that with the young, will enable you to judge better than anything that can be written on the subject.

COTONEASTER MICROPHYLLA LOSING ITS LEAVES (P. M.).—It is difficult to account for your plant losing its leaves, as we have it in almost all situations, moist and dry, in sunshine and shade, yet it thrives in each. We find, however, that the leaves of *C. Simonsii*, a much stronger growing species, have fallen very much this winter, whereas *C. microphylla* is as densely clothed as ever and loaded with fruit of a rich rose colour. It would be well to ascertain if there be nothing pernicious in the soil it is growing in, as an escape of gas or a mixture of some poisonous chemical ingredients. Your plant, of which you enclosed a specimen fruit, is *Carotonia siligua*.

HEATING A MELON-PIT (W. D.).—If you meant to keep your present lining and a bed of tan inside, then you might heat your house sufficiently with two four-inch pipes. We should prefer the wall at the front to be close instead of pigeon-holed, and then you would have the heat without damp and steam. If you preferred having no tan, except perhaps a surfacing, and not to depend much or at all on the lining, then the best plan would be to have a small furnace and boiler at the west end, low enough for the top of the boiler to be below the lowest pipe in the house, and then take a flow and return for bottom heat and the same for top heat. This can be done and regulated by valves; or, as described the other week, take the flow to a cistern above the boiler, and from that regulate the flow for top and bottom as wanted.

PLANTING TUBEROUS-ROOTED TROPEOLUMS (M. A.).—We presume your *Tropæolums* are the small-flowering tuberous kinds. The shoot generally comes from the smaller end, but not always. If you just cover the bulbs with light soil, and give no water until they shoot, there can be no harm. It is quite as well to keep the tubers covered with soil in a shallow tray until they do shoot, and then pot them into their flowering-pots at once. Training is a matter of taste. Some like wire trellises flat or balloon shaped. We think nothing is more graceful than the top of a Larch tree, and the shoots entwined among its branches. Much care is necessary in training—in fact, when growing freely the shoots will want looking to every day, so that they be not permitted to grow in big wreaths and bundles. We have forgotten to say that sometimes the tubers will take a freak and rest for a year or two, and then come all right.

HEATING PIT FOR CAMELLIAS (A Learner near Bradford).—If your *Camellias* and *Azaleas* are healthy they will not need your hotbed of leaves and dung, but the heat from the pipes would be enough. However, if you think a little moist heat below would be advisable, be sure that the dung is sweet; and when you cover with ashes do not plunge the pots so much as half their depth. A sweet hotbed in such a place would be the thing for Melons, Cucumbers, and seeds of very tender plants, &c., but not so much for *Camellias*. Their small roots are easily injured with much bottom heat.

SOWING GLOXINIA TUBIFLORA (Subscriber).—Sow in hotbed. Sprinkle the seed on the surface, and then the least of white sand over it. Cover the pot with a piece of glass, and shade until the small dots of seedlings appear. Give them rich light soil.

SOWING ANAGALLIS (Idem).—Sow at any time before March in gentle heat. They should have sweet fresh loam and a little leaf mould.

SOWING BALSAMS (Idem).—If you have plenty of room and a cool place to take them to after their second potting you may also sow now; but if not, you will obtain better plants by deferring until April, and then, after the first potting, keeping them in a window-sill, or a cool greenhouse, or planting them out of doors. After the first potting the soil for *Balsams* can scarcely be too rich.

CHRYSAIDS (Nesci Brown).—It is the chrysaids of *Pieris rapae*, the small cabbage butterfly.

COCOA-NUT FIBRE DUST (Golden Fleecy).—Mix it with light loam in the proportion of one part by measure to two parts of loam.

SPOTTED GERANIUMS (P.).—You have a bad case of the spot. It is very difficult to eradicate. Your only chance is to cut off every affected leaf, and keep the plants drier with abundance of air and a little more heat. The chief causes of this disease are a close muggy atmosphere, roots too damp in winter, pots standing on a moist close bottom, as sand or ashes, and allowing the sun to strike on the foliage before it is dried by heat and air. By giving the plants the advantage of the opposite treatment you may succeed in making your plants all right, but some plants must inevitably be lost.

CROSS-BREEDING PELARGONIUMS (—).—Mr. Beaton is too unwell to reply to your queries at present. If you refer to the indices of our three last volumes you will find a mass of information on the subject, and the whole is epitomised in "The Science and Practice of Gardening," published at our office.

PILLAR-ROSE PRUNING (A Four-years Subscriber).—You may cut out some of the very gross shoots to the bottom, and leave the others as they are, as some Roses flower but at the tips. Yours planted only last year may be encouraged to grow until they occupy their allotted space, while by cutting out some of the gross shoots the bottom will be furnished.

BUDGING ROSES (Idem).—Use worsted string, or yarn very loosely twisted, to tie on the buds, and tie them gently, but at the same time sufficiently firm to close the opening. Matting or any flaxen tie bands expand and open in dry weather and become inconveniently tight when wet, and are consequently not so good. Articles in our previous Numbers have explained this.

PEACH TREES CRACKING AT THE COLLAR (Idem).—Some varieties are prone to this, but it does not seem to be attended with any bad consequences, as we have seen excellent fruit from a tree whose collar was entirely decayed, except a sort of spiral band that united the top with the root. If the top be healthy the stem is of less consequence, especially in an old tree. Attend to the instructions given by Mr. Fish and others from time to time, and success will crown your efforts.

SLUG EATING WORMS (Worcester).—Slugs will resort to and eat any dead animal matters. The live worm you saw them feeding upon must have been weakened by disease or accident, or it would have easily withered away.

NAMES OF PLANTS (W. O.).—1, *Chorozema varium*; 3, *Berberis Darwinii*. It is impossible to name plants from such scraps as the others are. (A. A.).—1, *Asplenium rutefolium*; 2, *A. splendens*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

DOTTINGS AT DEVIZES.

I SPENT a few hours at the Poultry Show lately held in this town. Few towns boast so convenient a spot for a Show—light, airy, and hitherto sufficiently large for the purpose.

There was a capital collection of poultry, but Game was pre-eminently at the head. A splendid lot of birds must have given the Judge some little trouble. Even with the arrangement of cock and one hen, it appears difficult to satisfy these pugnacious birds. I noticed especially that Mr. Fletcher's beautiful first-prize Brown Red bird treated his temporary partner in a shameful manner. In these classes it is absolutely necessary to make some greater provision against battles than was made at Devizes. A piece of wood 5 or 6 inches in width would prevent many squabbles if nailed on the outside of the divisions. It was a constant source of anxiety to the indefatigable Secretary.

I was delighted to see large Rose-combed Dorkings prizetakers. Though I no longer breed them, I am very pleased to see that you are urging breeders not to make them birds of feather. In Spanish an accident shifted the prizes. The third-prize cock of Mr. Rodbard was very nearly blind from the size of the white face. I do not think he could see with his right eye! In some unnoticed pens the trimmer seemed to have been at work!

Cochins were few but good. There was a splendid pen of Whites, and the Buff single cock was a magnificent bird.

Some of the Brahmas were good; but it is quite useless for breeders to show a pen with pea and single combs. Years ago they might have passed muster, now they must be uniform. I think I should have reversed the judgment in the single cock class.

Some Malays were there, most conspicuous by their ugliness. Bantams were first-rate, and mustered in large numbers; so,

also, were the East Indian Ducks, the entries of which were greater, if I mistake not, than any others!

The sweepstakes for single cocks brought some good birds, but is to my fancy a great mistake, and gives birds a value they have not really earned. Three classes contained only two birds each, whilst one, the Polish, had only a single representative. It appears to me a far better plan to let the cocks entered in the other classes be entered in a sweepstakes or not, according to the fancy of the owners. This would save expense to the owners in carriage, and I feel certain would add to the income of the Show, by bringing a greater number of birds into competition. Whilst at the single cocks, I may mention that some of the pens in which they were shown were much too small. I allude especially to the Brahmas and Malays, which could barely turn round. This not only injures the bird in constitution, but often so damages the plumage as to prevent any further prize-taking till the moult is over. The Committee would do well to alter this; and if they could make some of the pens for the larger-framed birds more commodious, it would be a move in the right direction.

Constant attention was paid to the wants of the occupants of pens. It struck me that the food was almost too plentiful; there certainly was no lack of it. The prizes were paid to any winners on their visiting the Show, or directly after by post. Here Devizes sets a very good example, which more experienced shows might imitate.—Y. B. A. Z.

DO ACORNS DISCOLOUR EGGS?

I HAVE a Silver-spangled Hamburgh pullet which laid in December last. The yolk of her eggs was black. I have two other Silver-spangled Hamburgh pullets and a half-bred pullet, a cross between Spanish and Dorking, which began to lay last month. The two Hamburgs also lay black eggs. The half-bred lays eggs of their natural colour.

I have other half-bred hens which laid eggs last summer and this winter of their natural colour. I am perplexed to find that now the half-bred pullet (Spanish and Dorking) is laying black-yolked eggs; and I am afraid that when the other half-bred hens lay again, their eggs will also be black-yolked.

The eggs are unsaleable, and we do not relish them ourselves. If you can give me any information as to cause, or if it is common for fowls to lay black-yolked eggs, I shall be very thankful.

I began to keep fowls last summer. They all run together with a half-bred young cock; they have a large park and wood to run over, where they have found, and do now, plenty of acorns. They have eaten a few holly berries, and are very fond of the ash-leap, and raw potato parings. Besides oaks and hollies there are a great many Scotch fir trees. The soil is sandy peat, sandy loam, sand rock, and gravel walks. I feed the fowls once a-day with whole barley, and occasionally with boiled potatoes. They are in good condition, and have what clear water they choose, sleeping in a hen-house at night.—H. H. D., Kent.

[We cannot answer your question. We have fowls that run where there are plenty of acorns, but we never see them pick one up. There is strong colouring matter in an acorn, and it is not unlikely they may have to do with it. Many birds lay eggs that have a dark shade on the surface of the yolk.]

BLACK BANTAMS AT DARLINGTON.

HAVING been a Bantam-breeder in my time, I have observed with some interest the controversy in your paper relative to the pen shown at Darlington, which I observed had the cock's legs washed, and, I was informed, on the spot "by order of the Judge, Mr. Hewitt."

Pure black legs are, amongst other things, characteristic points in Black Bantams—at least, so I have always understood; but so far as the controversy goes (upon which I do not say a word, but have my opinion), nothing to my mind elucidates Mr. Enoch Hutton's share in the blame, so much as his advertisement in your Journal of February 3rd, taken in conjunction with his famous letter of the 30th December last, in which he says the legs "were naturally a good dark colour." The awful mystery seems explained. The advertisement of the 3rd inst., says, not alone that he has "Black Bantams"

and "White," but that the eggs of the Blacks can be "warranted from pure black-legged birds only if required!" It is more than rumoured that he has a cross-breed, and it would be very extraordinary if he had not.—OBSERVER.

INSECT-FED HENS.

THERE is a person near Preston who keeps a great number of hens, and every day feeds them on some kind of insect that makes them lay—besides meal. I believe he breeds them from some old cheese, &c. All I know is that his hens lay regularly in the winter. Can you give me any information what these insects are, and how they are to be obtained?—W.

[We fancy the insect on which the fowls are fed is the gentle, or flesh-maggot. They are bred in immense quantities in Germany for this purpose; they are bred in pits, under glass, and are regularly fed and attended to. They will make your fowls lay; but coupling the objectionable nature of the food with the fact that forced laying spoils hens, and induces premature decrepitude, we think you will agree with us that "*Le jeu ne vaut pas la chandelle*."]]

YOUNG PIGEONS WITH OVERGROWN MANDIBLE.

I HAVE had lately a number of my young Pigeons with their upper mandible overgrown and hooked at the point. I cut one, but whether too much or too little I cannot say, it seemed rather to encourage its growth.—J. M. C.

[If you are breeding many birds with this deformity the fault lies with your breeding-stock; you had better introduce some fresh blood, mating your old Pigeons to the new comers. If the deformity is slight, a lump of old mortar made salt by soaking in salt and water will keep the beaks worn down at the points, as they will constantly be used in pecking it.]

PHEASANT AND SILVER PHEASANT HYBRID.

ONE of your correspondents doubts my assertion respecting the cross between the common Pheasant and the Silver Pheasant. Let the following be a reply to his doubt.

A gentleman having more Silver Pheasants than he could keep in confinement, turned a few out into his game-preserves. In the course of a year or two, several pied or mottled birds were seen in the woods. The next year the gamekeepers often met with more than a dozen of such birds at a time. I saw some of them, and they had a strange appearance compared with the old birds.

Nine years since at Bretton Poultry Show, there was exhibited, in a pen of Guinea Fowls, a hybrid between a Black Red Game cock and a Guinea hen. The head and shoulders and hackle were those of a Game pullet, the remainder of the bird was like a common Guinea hen. I had intended making some further inquiries after the fowl, but a death took place in our family the day after the Show. The bird was forgotten, and what became of it afterwards I do not know. About the same time at another of our local poultry shows, there was exhibited a pen of chickens the produce of a Bantam hen and Red Grouse, these I did not see.—S.

INTERNAL MOISTURE IN WOODEN HIVES.

I SHOULD be glad to know of some plan for keeping wooden hives dry from internal condensation, as in cold weather I find the moisture runs from their mouths.—B. W.

[The following communication from "A DEVONSHIRE BEE-KEEPER" describes a new mode of combating this difficulty. As, however, his plan appears to be applicable only to bar-hives and frame-hives, we would suggest, that in ordinary wooden boxes with fixed crown-boards nearly the same result might be obtained by boring a row of holes in the top, with, say, a three-quarter-inch bit, as near the back of the hive as possible, and covering them with a strip of perforated zinc.

"Having been greatly annoyed in former years by the injurious effects of internal moisture in wooden hives, and objecting to the usual plan of ventilating through a central aperture as likely to

be detrimental to the well-doing of the young brood, I have this winter tried a mode of ventilation which appears to have answered admirably, by keeping perfectly dry the interior of those hives to which it has been applied, whilst breeding seems in no way to have been affected by it.

"My apparatus consists of a square wooden frame an inch deep and of the same internal dimensions as the hive to which it is to be applied. A half-inch slit extending, nearly its full length, is made in one of the sides and covered with perforated zinc. This frame is inserted between the hive and its crown-board with the perforated slit at the back, and ventilates the whole hive when thus applied in the most complete manner without producing any current of cold air which is likely to prove injurious to the prosperity of the brood. As far as my experience extends at present, it has been completely successful in preventing the accumulation of moisture in the interior of wooden hives.—A DEVONSHIRE BEE-KEEPER."

FERTILE WORKERS—WOODBURY UNICOMB HIVE.

I LOOKED at my two artificial Ligurians on the 2nd of February. In No. 1, which I think has had no queen, and which had drones when I last looked, I again saw the drones, but no queen and no young brood. I then examined No. 2, and found the queen had begun to lay eggs; a piece about 2 inches square was sealed-up, others were in the grub state, and there were some new-laid eggs.

I did not look at the old hive; in fact, they terrify me, as they make an attack whenever I go near them. They are very strong. I will let No. 1 go on as it is. Do you think the bees (if it really is the workers that have been laying the eggs previously) will begin to do so again?

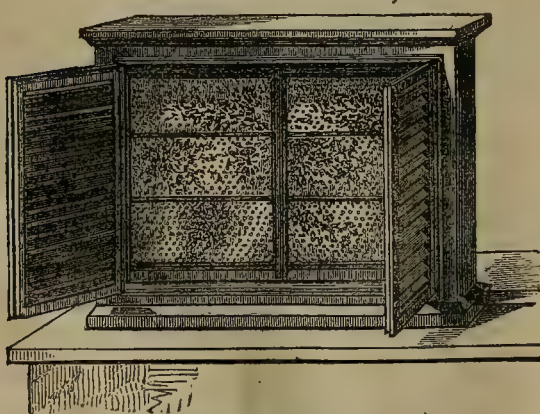
What is the best kind of glass hive for enabling one to see all their operations, and where could I obtain one? Where could I procure perforated zinc, which would allow the bees to pass through, and prevent drones and queens from doing so?

In taking off supers, or, in fact, doing anything to bees, I find that if I take them into a dark room with only a candle burning anything can be done to them, and they never offer to fly, if first given a few puffs of smoke from a lighted piece of cotton rag. It is a good plan, especially in winter, as it can be done any day. I did mine that way on the 2nd. I do not think mine have any chance of being able to get at any flowers this month. It has been a very stormy winter all through. Last night (February 4th) we had a perfect hurricane of wind and rain, with loud peals of thunder.—ALEX. SHEARER, *Yester Gardens*.

[It would really appear that the drone eggs in No. 1 must have been laid by fertile workers. If this be so, we can see no reason why they should not resume egg-laying as the season advances. We are glad to learn that you intend continuing the experiment, which is a very interesting one, and one which we hope will not escape the attention of our able correspondent Mr. J. Lowe.

The hive which will best meet your requirements is the

WOODBURY UNICOMB-HIVE,



in which you can readily place either No. 1 or any of your stocks which are in Woodbury-hives. It is fitted for the reception of

comb attached to bars; and, having outside venetians, or sun-blinds, instead of the usual opaque shutters, the bees work in the full light of day, and therefore continue their operations undisturbed when subjected to examination by the apiarian. It was a hive of this description tenanted by Ligurians, which excited so much admiration in Messrs. Neighbour's stall at the International Exhibition. These gentlemen manufacture and supply them at various prices, according to the kind of wood employed, and the degree of elaboration required in their workmanship.

We do not know if perforated zinc is manufactured of the description you require. Any ironmonger would probably make the inquiry for you. The perforations should be three-sixteenths of an inch in diameter.

We have often operated within doors when compelled to do so during winter, and consider it the best mode to adopt in very cold weather.]

THE COMMENCEMENT OF THE BEE SEASON.

It is recorded by Bonner the celebrated Scottish apiarian, that when the opening spring showed the first farina-laden bee enter his hives, he was so overwhelmed with joy that he made the day on which this occurred a regular holiday, and was in the habit of calling his family around him to celebrate over a glass of his home-brewed "metheglin," the happy event; and to "rejoice with him and his faithful servants at the return of the salutiferous season." Some of our modern apiarians, perhaps, will smile at old Bonner's practice, but the enthusiastic can easily appreciate the feelings which prompted these manifestations of pleasure on such an occasion. There are many circumstances which combine to produce such kindred emotions in all of us. The opening spring is a cheerful season. It is emblematic of youth, of promise, of hope. The long night of winter with its gloom and its darkness, is coming to a close; and spring, full of returning life, wakes up and resuscitates from their temporary slumbers ten thousand forms of animal and vegetable existences. Already the sweet little snowdrop, impatient of delay, has unfolded its pure white charms, and the crocus in some localities begins to expand its gaudy petals; and here and there along our garden-borders may be seen life pushing upwards to the light of heaven, while by the southern wall, and throughout the more sheltered grounds, the peeping buds of green proclaim that youthful nature is again reanimating each but-recently-withered-looking form, with signs of returning life. Beast, bird, insect and plant, all seem to rejoice in the first faint forecasts in the season's future; and the apiarian is not the last to hail with joyous welcome the evidences of all this, by seeing his little favourites shaking-off the dull lethargy of a long repose, and, bristling with renewed life, again commence the busy labours of another season.

I have often thought that it would be very interesting to know the exact periods when the variously-situated apiaries throughout the country commenced and closed the operations of the year. I have no doubt that the differences in point of time are considerable, arising principally from varieties of climate in the respective localities, and partly, no doubt, from the nature of the pasturage afforded. I imagine there may be a difference of some weeks in regard to the advancement of bees in spring, between the northern and southern parts of the United Kingdom. I observe from Mr. Woodbury's notice in No. 97 of this Journal, that so early as the 29th of January his hives were described as being in full activity, and that pollen was being freely carried into most of them. Such an announcement as this strikes us northerners with astonishment, and shows the advantageous start the apiarians in the southern parts of England have compared even with those situated like myself in the central division of Scotland, where we have at this season so much cold, wet, and wind as to preclude the bees altogether from showing themselves, even at the entrances to their hives. It is true that the present winter has been unusually mild; the thermometer averaging higher than ordinary. Notwithstanding, such has been the extraordinary character of this extraordinary winter—so unusually mild, yet withal wet and windy, that I have seldom or never seen a season so unpropitious in this respect—that in my apiary at least the bees have scarcely ever been permitted to venture abroad, but have been kept close prisoners for the most part, I should say, from October onwards to the present time; and there is not yet any apparent prospect of a change to the better.

It was but yesterday (the 4th February) that a storm, the nature and severity of which, is I believe unexampled at this season, passed over Edinburgh like a desolating scourge. Fortunately its duration was short—only half an hour; but during its continuance, the raging elements, thunder, lightning, rain and hail, waged a terrific war, inflicting considerable damage on property throughout the city, though fortunately unattended with any personal injury or loss of life. The thunder pealed forth with awful voice; the lightning flashed luridly athwart the opening sky with its broad bright streams of vivid blue; while the rain and hail fell in torrents, and the wind, blowing a perfect hurricane from the west, bellowed and roared with appalling fury. The scene was imposing and sublime in the extreme. Such an electric conflict seldom occurs at this season of the year; and though we might with reason have expected that the extraordinary weather which has ruled for some time back had at last reached its culminating-point, yet there is no apparent prospect of a speedy change in its peculiar character.

In ordinary seasons, if the weather is mild, we expect to see our bees begin pollen-gathering about the second week of February; but even then they are like angels' visits "few and far between," a solitary bee being seen now and then in this hive or that, entering at long intervals. Indeed it is only in March that we can say that our hives in this locality can be said to be in full activity, and carrying pollen freely, and to have really commenced the labours of the year. Accordingly, young bees do not generally appear till the beginning of that month.

I may mention that the earliest date I ever witnessed pollen-laden bees enter my hives was on the 28th of January, 1861, and the latest date on December 18th, 1857; but I again repeat that pollen-gathering is not actively commenced with us, even in early seasons, till about the beginning of March.—J. LOWE.

NEED THERE BE PROFITLESS BEES?

"T.," page 84, may be assured that with a little more circumspection his bees may be turned to a far better account. His wooden house should be closed in front, with the exception of some outlets for his bees. They ought to have 4 inches space in width, and 1 inch, or rather less, in height. On the outer side and beneath these there should be a ledge about 6 or 8 inches in length, and 3 inches in breadth for the bees to alight on. This landing-place should slope a little in front, in order that rain may freely run off. The inner side of this outlet for the bees should be perfectly even and square with the standing-board, so that a bee-box or any kind of hive, indeed, may, with a little contrivance, be exactly adapted to it, and made to fit so closely that not a single bee can escape at the junction into the house. The sides of the house should be well closed, and the back ought to have folding-doors that may open and close easily, and, at the same time, fit so perfectly that neither sun nor rain can penetrate.

Supposing that this house has been formed with four posts placed at the corners of the building, and that the legs of the same stand a foot or two above the ground; these legs ought to be kept constantly immersed in pans of water, formed either of lead, iron, or zinc, allowing a space of an inch or 2 inches between the latter and the legs, in order that the building may be kept constantly insulated. The great object of this insulation is to free the bees entirely from the approach of various enemies, which consume the honey almost as fast as the bees can collect it. These enemies are chiefly ants, millipedes, earwigs, and snails.

I have adopted this plan of insulation for several years, and have very seldom been troubled with the presence either of ants, millipedes, or snails, as they never can pass the watery moat if properly attended to. The latter acts as a complete barrier to them, and so it does, generally speaking, to earwigs; but these latter, bearing the motto "We fly by night," now and then will be found to trespass, and a single one may occasionally make good its landing in the fort, and, of course, require speedy punishment. I wish I could speak as effectually of means of expelling spiders. These adepts in cunning, as well as stratagem, overreach all my endeavours to bar them out. They will persevere in gaining a footing within the citadel, and, like military sappers and miners, carry on their art under the shade of night. Their webs, so beautiful to look on, and their ingenuity so truly perfect and mathematical, have been the admiration of naturalists of all ages, and their adaption of means to the end so

astonishing, that one cannot avoid exclaiming, How great is God in all things!

These spiders are seldom seen during the day—they hide themselves in some small crevice, and at nightfall spread their nets in front or near the mouth of the hives. I generally visit my hives early in the morning, and frequently find two or three of my dear little friends prisoners in the meshes of the nets. Then I resolve to visit them again at nightfall, and perchance I catch the delinquent *flagrante delicto*, and do not spare him; but frequently he is too quick for me, and either slips back into his corner or crevice, or as suddenly drops to the ground where, under the shade of darkness, he contrives to escape.

There is another enemy I would guard "T." against—namely, the large Tomtit or Ox-eye. He is a great devourer of bees in the winter and spring, but he is easily entrapped with a piece of fat; he generally has a companion, and both are readily thus caught.

I have said enough for the present of the enemies of bees. I will now turn to the friendly means whereby great encouragement may be given to the bees in spring. Whenever there is a garden at hand, let all the turnips not required for domestic use remain and run to seed; their blossoms will afford an abundance of farina—the chief pabulum or food of the larvæ in the cells. Even a small piece of ground might be appropriated to the purpose of planting a few dozen turnips purchased at some greengrocer's stall, with a portion of the green top remaining on them; these will readily shoot into large stalks, and every head will bear a blossom for the million of bees. Crocuses and snowdrops, the blossoms of gooseberry and currant trees, and the catkins of willows and nut trees, will likewise be available.

And lastly, having arranged the apiary and discussed the various foes and friends of bees, let me advise "T." to send to Messrs. Dean & Co., booksellers, London, and procure a little book on the entire subject, called the "English Bee-keeper," by "A COUNTRY CURATE," one of the most expert and intelligent apiarians of the present day. Let "T." read it twice over, and I am sure he will reap greater pleasure from his bees; and if he profit by the advice therein given, he will be able to treat his wife frequently with a present of most delicious honeycomb—the sweetest of all sweet things.—APIARIUS, *East Kent*.

NEW BOOK.

Popular Science Review. Edited by J. Samuelson. R. Hardwicke, 192, Piccadilly. Published quarterly.

We are not of the number who think it desirable to make all men philosophers; and fortunately, if all the world thought it desirable, the world would fail in realising its desire, for there are very few minds capable of deep research or profound reasoning, so there is no danger of our grooms poisoning our horses in experiments upon a universal food, nor of our coachmen upsetting us whilst designing practical tests of a carriage's centre of gravity. But we are of the number of those who would place a sixth sense within the reach of every one who chooses to acquire it, by popular explanations of everyday phenomena, and popular details of every modern discovery as it occurs.

Dr. Paris's little volume "Philosophy in Sport made Science in Earnest," is just the book we would put into a boy's hand, for he ought to know "why" his kite rises from the ground, and "why" his top spins; and every one is all the more respectable and respected for being able to explain "why" a dew appears upon the glass in a room and upon nothing else; "why" he prefers putting his foot upon a carpet rather than on a stone floor when he gets out of a bed during a cold morning; and "why" his razor mows off his beard more freely when it is hot than when it is cold.

So is every one more respectable and self-respected, and certainly has another source of pleasure opened to him, who understands the discoveries Science is every day revealing, without the labour, not to say the impossibility, of making himself a master of those sciences. Now, "The Popular Science Review" is just the publication to impart the desired information, saving the reader from the labour or impossibility. It is published quarterly, and in an amusing, readable, easily-understood form, keeps one "read-up" in the discoveries of the day. It embraces all the sciences, and as its best recommendation we will give a few

extracts beginning with one from "The Zoology of the Exhibition":—

"In the South Australian court was exhibited the Talegalla (with a representation of its nest), another of those characteristic birds with which these regions abound. Mr. Gould, who visited Australia with the ardent enthusiasm of a true ornithologist, has given us the best account of this bird, and places it among the Rasores (or domestic fowl tribe), and considers it as the Australian representative of the Turkey, which it equals in size.

"The Talegallas are gregarious and shy, rapidly running through the tangled brushwood. They utter a loud clucking noise as they stalk about the wood; and, like the ruffed Grouse of America, when perched on the branch of a tree, they will sit composedly to be shot at repeatedly till they are all brought down. The most wonderful part, however, of the history of this bird is its nest. It collects together a great heap of decaying vegetables as the place of deposit of its eggs; thus making a hotbed, arising from the decomposition of the collected matter, by the heat of which the young are hatched. Mr. Gould describes this heap as the result of several weeks' collection by the birds previously to their laying, and as varying in quantity from two or four cartloads, and of a perfectly pyramidal form. It appears to be the united work of many pairs of birds, and the same site is used by them for several successive years. The Talegalla uses its foot for this work, and when sufficient is accumulated, the eggs are deposited about a foot apart from each other, and buried about 2 feet deep, perfectly upright, with the large end upwards; and there they are left, as in an artificial incubator, till they are hatched, when, it appears, that the chicks force their way out without assistance. The natives collect as many as a bushel of eggs from a single mound, and they are much sought after on account of their delicious flavour and large size ($3\frac{1}{2}$ by $2\frac{1}{2}$ ins.). These remarkable statements of Mr. Gould have all been verified by the behaviour of some of these birds kept in confinement at the Zoological Gardens, Regent's Park, where this strange method of incubation has been observed in every particular."

"The Bower-birds (*Ptilonorhynchus holosericeus*) also keep up the character of Australia for its anomalous productions. These birds, with a plumage resembling black satin, are allied to the Crow, and are most singularly interesting on account of the bowers from which they take their name, and which they construct as follows:—With great skill and dexterity they weave a sort of arbour of twigs, fixing them below in a bed of various materials, and decorating their promenade, which is of various lengths, with shells, feathers, and other ornamental materials, which they collect from the country round. This bower has no connection with their nest, which is built later, but serves apparently as a playground, in which they sport, and play at hide-and-seek, bo-peep, and a variety of similar amusements, which we should hardly expect to have found their way into bird life. Their bower constantly occupies their attention. They arrange and re-arrange the materials every day, placing about it everything within their reach which may by any means serve as an ornament to it. The habits of these birds have also been observed in the Zoological Gardens."

From the botanical portion we will also give this extract:—

"*Hybrid Plants returning to their original species.*—M. Naudin, having fertilised plants of *Datura stramonium* with others of *D. tatula*, afterwards sowed the seeds produced by this union, and obtained hybrids of the first generation. These hybrids were isolated; and a few seeds coming to maturity, they were sown in April, 1862, and produced twenty-two plants of the second generation—viz., five of *Datura stramonium* in all its purity, whose fruits ripened and came to maturity; and nine typical plants of *Datura tatula*. The remainder were more or less of a hybrid character. M. Naudin believes that this third generation of the hybrids will turn completely to *D. tatula*. These remarkable facts, which demonstrate the fact of the spontaneous disappearance of fertile hybrids, without the intervention of a crossing with one or other of the parent species, appear to M. Naudin at present inexplicable."

"*Acclimatisation of Japanese Plants.*—M. Simon, writing from Japan, continues to recommend valuable plants for introduction into the Jardin d'Acclimatisation. The Hemp Palm (*Chamerops excelsa*) bears a temperature of 10° Fahrenheit, requiring no particular care. The stalk of each leaf is covered with filaments of various fineness, of which the coarsest are used for ropes, and the finer for nets. Another plant he speaks of is the Soja, a kind of Bean used by the Japanese for a condiment, and a very savoury adjunct to almost every Japanese dish.

"*The Sago Palm.*—Mr. Wallace, who has returned laden with valuable information from his Eastern travels, speaks of the Sago Palm as the staff of life to the inhabitants of New Guinea and the adjacent islands. He described it as a truly extraordinary sight to behold a whole tree trunk converted into human food, with as little labour as is required to convert corn into bread. A single good tree will produce six hundred pounds of sago cakes; and, with an expenditure of ten days' labour, a man may produce food sufficient for a year's consumption. The natural result is improvidence, laziness, degradation, and misery."

The following is a specimen of the "Microscopical" news:—

"*New method of preparing Alga, &c.*—Professor Reinicke recommends the following mixture as a dense, non-drying fluid, which prevents the shrinking of soft tissues—viz., alcohol (90°), 3 parts; water, 2 parts; glycerine, 1 part. The spirit being lighter and more limpid than water, compensates for the greater density of the glycerine. The preparation being placed on the glass slide in a drop of water, another drop of the above mixture is added to it, and it is placed aside, secure from dust, to evaporate till nearly all the fluid is gone. A second drop is then added, and so on, until a sufficient quantity of the non-drying material is left to cover the object. The glass cover should not be put on until all the evaporable part is gone. In this way M. Reinicke has succeeded in retaining the natural form, colour, and structure of delicate filamentous Alga, Fungi, and animalcules; and objects taken in the act of fission, conjugation, &c., remain unchanged, and as useful as living subjects."

We have many more extracts marked in Mechanics, Anatomy, Astronomy, Geology, Photography, &c., but we must close by stating that the pages of this Quarterly contain contributions from Dr. Fairbairn, Capt. Donnelly, Cuthbert Collingwood, Har-

land Coultas, Jabez Hogg, E. B. Truman, J. Breen, Mrs. Lankester and other favourably-known writers.

OUR LETTER BOX.

CAUTION.—Mr. Ridgway, Beawick Lodge, has obtained some Pigeons of a Cornish lady, and she cannot obtain the money for them. Another consignment of birds was detained by the station-master of the Great Northern Railway. Any one sending birds to a stranger, especially at Manchester, without prepayment, seems to us as if the senders were willing to run the risk of being cheated. We are weary of giving such cautions.

DUCKS' EGGS UNFERTILE (J. M.).—Your eggs are what are called clear eggs—i.e., they have no germ of life in them. The reason why they do not spoil is, that there is no development. The egg is not susceptible of change. When an egg is sat upon for a time, until a change has taken place, and there has been a beginning of life, and from some cause or other it is then neglected, the fetus perishes and becomes putrid. The egg is either added or it bursts under the hen. If your Ducks have no pond, provide one. If they have a pond, change the drake.

BROODY HEN (Nesci Brown).—We are afraid a wilful hen must have her way. All you can do is to shut her up in some place where there is nothing but the bare earth, no semblance of nest, no hay, straw, or anything of the sort; if on hard gravel so much the better. Many are sadly in want of broody hens.

DORKING COCKERELS FIGHTING (A. R. H.).—There are two methods of overcoming the difficulty you complain of. One is, to let the birds fight it out. Some object to that. Another and a more humane plan is to provide a linen bag, or an old pillow-case, tie it on a long rod, and when the birds are sparring at each other, buffet them both with it. Neither the first nor the second trial will be effectual; but if you will persevere for a time they will leave off fighting. If, however, the youngest cock has so little stomach for the fight that he runs instead of sparring, buffet the older one as he pursues him. If you have two yards, try to make them separate walks for a time. One cock would answer your purpose in June, but you must have two now. If every other plan fail, you must let the birds run on alternate days, or morning and afternoon; but it is bad to shut up a bird.

SELLING PHEASANTS AND PARTRIDGES (A Young Beginner).—You cannot sell game of any kind, either dead or alive, without a license, and then only during the seasons determined by law. Gold and Silver Pheasants are not considered game, and may be sold by any one and at any time.

WHITE SPANISH FOWLS (R. C.).—We have never believed the White Spanish were a pure and distinct breed. We believe them to be a sport. We have a hen this year has moulted nearly white. The faces should be white.

CATAREH IN FOWLS (Constant Subscriber).—Give your fowls plenty of bread steeped in strong beer. They are suffering from cold, and the effect of long-continued wet.

SWOLLEN RUMP GLAND (Kenton).—It is common in old birds for the oil-gland to become hard and ossified, as it were. There is no cure for this in an old bird. In a young one it is often only a temporary malady, and is cured by opening the top of the conduit. Cochins-China hens lay as well after as during the first year. They do not lay so early. Hens never lay so early as pullets.

BIRD PRIZES AT THE CRYSTAL PALACE (W. R.).—There are many points to be considered in such awards; and, even if we differed from the Judges in opinion, yet, as there is no suspicion of unfairness, no benefit could result from adverse criticism.

BIRD STUFFING (J. Hodson).—We cannot spare space for the details, and we recommend you to buy Mrs. Lee's little volume, entitled "Taxidermy," published by Messrs. Longman & Co.

PURCHASING BEEES (C. J. T.).—There appears no reason to doubt the superiority of the Ligurian species of honey bee, which you may obtain by applying to T. Woodbury, Esq., Mount Radford, Exeter. The common species you may probably be able to buy from some of the cottage bee-keepers in your own neighbourhood. The present is the best time to purchase. Prices vary much in different localities, but we should consider 20s. to 30s. a reasonable price for a good stock at this season.

DZIERZON (X.).—The name of this distinguished apiarian is pronounced Teertsion.

BEE-KEEPING (A Subscriber).—You cannot do better than purchase "Bee-keeping for the Many" (free by post from this office for 5d.), and adopt Payne's improved cottage-hive as therein described, with the exception of having it made a little deeper (say 8 or 9 inches instead of 7) than recommended by the author. We should advise you to lay out 20s. or 30s. in the purchase of a couple of prime swarms in May, a similar sum in hives, &c., and keep the balance for the possible purchase of sugar for feeding or other contingencies. You may also derive much information from the perusal of a series of articles, "How I became an Oxfordshire Bee-keeper," from the pen of our esteemed correspondent "UPWARDS AND ONWARDS," which appeared in the first volume of our new series, and may safely adopt his modification of Mr. Payne's hive if you prefer it.

CATCHING FIELD MICE (An Old Subscriber).—The holes mentioned by Mr. Brent may be baited with peas, wheat, acorns, or any seeds which such mice feed upon.

WRIGHT OF HAY IN A CURB YARD (A. S.).—It varies according to the age and size of the stack so much that in some stacks 12 cubic yards are required to be cut for a ton of hay, and in other larger and older stacks only 8 cubic yards. From what you state we conclude yours is of the latter description, for if 8 cubic yards yield a ton, then 1 cubic yard would yield 20 stones of 14 lb. to the stone, the quantity your men obtained.

TERRIER PUPS (A Constant Reader).—The progeny resulting from breeding in-and-in are always weakly and liable to disease and deformity. It is certainly possible so to breed as you are doing, for the toy terriers are all so raised. If the loss of hair can be repaired by medicine, it will be by the following ointment rubbed-in until dry, left on for three or four days, then to be washed off with soap and water, and a fresh dressing given. Train oil, half a pint; black sulphur, 1 oz.; white hellebore powder, half an ounce; oil of tar, half an ounce. Mix.

WEEKLY CALENDAR.

Day of Mnth	Day of Week.	MARCH 3--9, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
3	Tu	Ash flowers.	29.285-29.224	degrees.	N.W.	—	m. h.	m. h.	m. h.	13	m. s.	62
4	W	Sea Buckthorn flowers.	29.790-29.554	49-14	N.W.	—	44 a 6	41 a 5	20 m 5	14	12 0	63
5	Th	Boy's Violet flowers.	29.903-29.415	46-33	S.W.	.19	40 6	44 5	rises	0	11 46	64
6	F	Hairy Violet flowers.	29.505-29.448	58-45	S.W.	.09	37 6	46 5	21 a 7	16	11 32	65
7	S	Royal Hort. Soc. founded 1804.	29.557-29.391	60-45	S.W.	.01	35 6	48 5	35 8	17	11 18	66
8	SUN	3 SUNDAY IN LENT.	29.631-29.541	61-41	S.E.	.02	33 6	49 5	51 9	18	11 3	67
9	M	Smaller Periwinkle flowers.	29.547-29.394	51-36	S.	.15	31 6	51 5	7 11	19	10 43	68

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 49.1° and 31.9° respectively. The greatest heat, 68°, occurred on the 9th, in 1826; and the lowest cold, 15°, on the 4th, in 1852. During the period 169 days were fine, and on 83 rain fell.

APRICOT MANAGEMENT.



NOWING that, with the exception of the Fig, there is none of our ordinarily-cultivated fruits so little under the command of the gardener as the Apricot, I confess to some

misgivings in commencing an article on its management.

True, we often see Apricots do well, and sometimes remarkably so; but their success is often more to be ascribed to the peculiarities of the situation than to any particular manipulation to which they have been subject, and it may be very gravely asked (as will be done hereafter), if their fruitfulness in some places is not rather in spite of the treatment they receive, than in consequence of it. This is, perhaps, assuming more than many will admit; but, let us first consider the natural habits of the tree, its likings and dislikings, and other features about it, the study of which will, perhaps, bring more converts to my opinion than any reasoning.

I believe the native country of the Apricot to be the southern shores of the Black Sea, and, most likely, many of the countries bordering on the Mediterranean, so that it may be said to be naturalised in a latitude several degrees farther south than any part of the United Kingdom; but we are also told that travellers rarely find a good Apricot in Italy. This is very likely the case, although that country may be in the same parallel with the one where the Apricot is found in such perfection and profusion. Other circumstances besides latitude, determine the growth of plants. The Sugar Cane is on the same degree of latitude with that of perpetual snow in India, and something of the same kind may be the cause of the Apricot not thriving so well on the warm plains of Italy, as it does on the elevated regions of Asia Minor, and the mountain chains that stretch eastward from them. Thus, also, the Grapes of southern Europe, and of the upper Rhine, do not flourish in the hot plains of Western Africa or of India.

The Apricot flourishes and attains the proportions of a fair-sized timber tree in Armenia. From the snow-capt summits of that country's mountains cold streams are constantly descending, cooling in their descent the earth and its vegetation, the Apricot meeting the cold current about half way down the mountains' sides; and that there is something in the air of those elevated regions which is essential to the well-being of the Apricot there is no doubt, and that we have no mode of imitating this highly rarified air is equally clear.

One cause of our want of success in Apricot culture is thus revealed; and if we want an analogy for it, let us look to many of the Sikkim and Bhotan Rhododendrons,

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which seem unwilling to thrive under the ordinary management they have received in our glass structures; and what else can account for their failure but the difference between our heavy, dull atmosphere, and the light, highly rarified air which surrounds them in their native habitats?

That strong currents of air are continually traversing the hilly defiles of the Apricot country, is testified by the travellers that have experienced them; and the gradual transitions from extreme cold to extreme heat are also what they are often strangers to against a wall in England, and have, perhaps, a little to do with failure. Soil has no little influence over success; but we have greater facilities for adapting this than we have for controlling the atmosphere, so that to the latter want of control I attribute our general want of success.

I would here inquire, Is the Apricot ever found in good condition near the seacoast? I have on more than one occasion given my opinion that the Peach and Nectarine are particularly at home in such places, more so, perhaps, than many hardy fruit trees and shrubs; but I cannot say I ever saw the Apricot in good condition there, and if it be so, there is another reason why atmospheric influences have much to do with success. The keen mountain air is widely different from that on the beach. If this be allowed, we will take another reason why Apricot trees are so often either unfruitful or so unsatisfactory.

The experienced plantsman of the present day knows full well that no amount of skill on his part can make all his plants have the nice bushy appearance that some have. No amount of cutting, however well done, can make the Poinsettia or the Euphorbia jacquiniæflora such nice bushy plants as Heaths, Azaleas, and many others. The knife may be used until the plant perishes under the punishment, and yet without becoming what the pruner makes the others. So, in like manner, the Apricot is, in many cases, ruined by the knife, for, like the Cherry, Portugal Laurel, and some other things, it will live and endure such mutilations as go by the name of prunings; yet its doing so is due to other favourable circumstances that prevent its dying rather than to the pruning (so called) suiting it. I admit that, planted against a wall, this cutting to shape cannot be done without; but it is owing to this cutting that I attribute in a great measure so many branches dying off, as well as the gumming, cankering, and other diseases which follow, or rather precede the sudden throwing-off of branches so commonly met with. Observe that I do not attribute those sudden paralytic affections entirely to the knife, but to that cause in conjunction with others.

I am far from certain that I am right in supposing that the age and worn-out constitution of many of the varieties now in cultivation may be a cause of failure. But as old varieties of Apples have ceased to be any longer healthy, why should not Apricots be liable to the same fatality? To those intending to plant, I would say, By all means try the new kinds, if they are recommended with confidence by those who have grown them; but some

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old favourite names are so tempting that we are liable to prefer them rather than risk accepting a stranger whose antecedents are unknown.

Let us now turn to the causes most likely to produce good results amongst us, and examine into the conditions in which Apricot trees are really found to do well.

In the first place, let us consider the soil as one of the main adjuncts to success. Naturally, the tree grows in the stiff, moist earth of mountain regions; in confirmation of this, I may mention that the best wall of Apricots I know of is at Lord Verulam's, in Hert's, Mr. Bogue, the intelligent gardener there, telling me that although they did remarkably well, he has never been so successful with Peaches—in fact, Peach trees had done very badly. The soil there is a stiff loam retentive of water, and the situation an elevated one for the district. The trees were trained in the ordinary fan-shape, and did well, producing fruit in all seasons, excepting those adverse ones, when other causes of failure might be traced. The aspect, I believe, was an eastern one, but some on an opposite aspect did well also, while no aspect seemed to coax the Peach into a like healthy, good-bearing condition.

In contrast with this we now and then find the Apricot do very well against the end of a cottage, but certainly more generally so when the ground is not too light.

I once met with an Apricot tree planted against the sunny side of a low miserable-looking cottage on a common, and from the appearance of the tree some attempt had been made when it was young to confine it to the wall, and possibly some persevering knifeman would have kept it there as long as it lived; but whether from neglect, change of occupants, or other cause, the tree had been allowed to take its own course, and quickly was not only above the eaves, but reached above the chimney-top. The growth was not without fruit either, for I was told it produced good crops in most years, but that the fruit was smaller than the same kind against walls. The situation was anything but an inviting one. A bleak waste was to the north of it, and no shelter of any kind near; and as excellent bricks were made a very short distance off, the character of the soil may be thence understood.

I firmly believe that in a situation like that, with shelter from cold biting winds at some little distance, the Apricot might be grown to tolerable perfection as an open standard, without any of the pruning or treatment which has advanced into the character of a science with other trees. I believe there are some orchards so planted with Apricots; but they are far from numerous, and none have come under my notice.

As to the position for the Apricot in the gardens of those occupying favourable positions in the south of England, I believe a north wall is not at all an unsuitable situation. This is more especially advisable in dry situations, and where the soil differs widely from that recommended as the favourite one for the Apricot. That a south aspect is not required by this fruit in places south of the Thames I firmly believe.

Other considerations as well as aspect operate on the result; but so long as pruning must be done we must expect the uncertainty now so common, and against walls trees must be pruned. Whether doing this operation entirely in summer, as with the Fig, may produce the best result is more than I can say; but I should like to hear the opinions of others who may have had more experience in summer-pruning only. My own practice, like that of many others, has united summer and winter pruning.

Of the Apricot as a house fruit I have but little hopes. The first time I ever saw it tried was in 1829, and that was a failure. Now and then attempts to work it on the Peach under glass have been tried at various times at places where I have been, but with no better result; and the recent failure to grow it in an orchard-house, recorded in this Journal, is a confirmation of my views—that a tree occupying so elevated a position, and exposed to the never-ceasing currents of air passing through its branches, can hardly submit to the cramped-up condition of both top and root it is subjected to while in an orchard-house.

I may conclude by saying that I believe the Apricot tree dislikes a confined air, a light soil, and a knife; and that its blossoms are amongst the hardiest we have; but that the young fruit, long after being set, and, in fact, swelling, is liable not only to injury but destruction from frost is also certain. Shelters, therefore, that will take off and put on are better than stationary shelters for protecting this tree in spring; and these shelters

ought not to be too early removed, as our late frosts must be very hurtful to a tree so forward as the Apricot is by the 1st of May.
J. ROBSON.

THE ROYAL HORTICULTURAL SOCIETY'S FIRST SPRING SHOW.

THIS was held on the 25th ult., and, the weather having proved extremely fine, there was a tolerably good attendance of visitors, notwithstanding the unfavourable concurrence of a levee on the same day.

The place selected for the Exhibition was, on this occasion, the portion of the ground floor of the International Exhibition building formerly occupied as M. Veillard's refreshment-room, along each side of which were arranged masses of Hyacinths, Tulips, Crocuses, and forced flowers, making a very effective display considering the early period of the year.

Class 1 was for 12 distinct kinds of Hyacinths and for nurserymen only. Here there were but two competitors—Messrs. Cutbush & Son, of Highgate, and Mr. W. Paul, of Waltham Cross; and the collections of both, as well in this as in other classes, were worthy of the reputation which these gentlemen enjoy. Messrs. Cutbush took the first prize, the sorts being Double Blue, Garrick; Single Reds, Macaulay, Princesse Clothilde, pink striped, and Von Schiller; Single Whites, Grandeur à Merveille, Mirandoline, and Snowball, with very large finely-formed bells; Single Blues, Baron von Tuyl and Grand Lilas; Single Black, General Havelock; and Single Yellow, Ida.

Mr. W. Paul, who was second, had Single Reds, Howard, Princesse Clothilde, and Solfaterre, the latter very fine; Single Whites, Grandeur à Merveille and Queen of the Netherlands; Single Blues, Baron von Tuyl, Charles Dickens, Grand Lilas, Marie, and Mimosa; Single Black, General Havelock; and Double Red, Lord Wellington.

In the next class, 12 Hyacinths of six kinds, the prizes were offered by Mr. James Cutbush; and Mr. Carr, gardener to W. B. Noakes, Esq., Highgate, was first with Single Blues, Baron von Tuyl, Charles Dickens, and Grand Lilas; Single Reds, Madame Hodgson, Von Schiller, Princesse Clothilde, La Dame du Lac, and Howard; Single Whites, Mont Blanc, Alba Maxima, and Grandeur à Merveille; and Double Blue, Garrick. This collection included several very fine spikes, and the bells were large without being too loosely arranged on the stem.

The second prize was taken by Mr. Taylor, gardener to C. A. Hanbury, Esq., East Barnet, who had also some large and well-grown flowers. This collection consisted of Single Reds, Cosmos, La Dame du Lac, and Macaulay; Single Blues, Couronne de Celle, Orondates, and Mimosa; Single Whites, Mont Blanc and Grandeur à Merveille; Double Blues, Garrick, Laurens Koster, and Van Speyk; and Double Red, Duke of Wellington.

The Tulips formed a most brilliant display, especially the collection of 50 shown by Mr. Cutbush in the Miscellaneous Class, and for which he received a first prize. He likewise obtained a similar award in Class 3, which was for 12 pots of six kinds. Those which he exhibited here were Vermilion Brilliant, Rouge Luisante, Couleur Cardinal, Keizerkroon, yellow and red; Proserpine, a rich rose; and Fabiola, rosy violet and white. The only other exhibitor was Mr. W. Paul, who had likewise a very fine display, which well deserved the second prize which was awarded for it. Among the kinds which he exhibited were Keizerkroon, Coligny, Le Matelas (a fine deep rose), Bakhuizen, and Pieter d'Hooge.

In the Amateurs' Class, for 12 pots of four kinds, Mr. Young, gardener to W. R. Barclay, Esq., Highgate, was first with some fine pots of Tournesol, Standard Royal, Scarlet Duc Van Thol, and White Pottebakker. Mr. Carr, who was second, had the same kinds, with the exception of Couleur Cardinal instead of Standard Royal; and Mr. Blogg, gardener to J. P. Gasiot, Esq., Clapham Common, was third with Gloria Solis, White Pottebakker, Royal Standard, and Tournesol.

Collections of Crocuses were shown in Class 5 by Messrs. Cutbush & Son and Mr. W. Paul. The former received the first, the latter the second prize; and in each case the competitor made an extensive and very attractive display. Among Messrs. Cutbush's flowers were Jeanne d'Arc, Lina, and Calypso, white; New Giant, yellow; Sulphureus; and a great variety of blue, lilac, purple, and striped kinds, such as Sir Walter Scott, David Rizzio, Prince Albert, Ne Plus Ultra, La Majestouse, Lilaceous

Superbus, Albion, Versicolor, &c. Mr. Paul had David Rizzio, Sir Walter Scott, Sir John Franklin, Argus, Prince Albert, Marie d'Ecosse, Cloth of Gold, Large Yellow, Albion, Amazon, and Arabella.

The only other collection of Crocuses was in the Amateurs' Class, which was limited to 12 pots, and this came from Mr. Blogg, who had fine examples of David Rizzio, Prince Albert, Sir W. Scott, Lord Palmerston, Ne Plus Ultra, Albion, and Mammoth.

Of Forced Flowers a fine collection came from Messrs. Veitch, comprising Indian Azaleas covered with bloom, *Andromeda floribunda*, *Wistaria sinensis*, double-flowering Peach, Persian Lilac, *Dielytra spectabilis*, Lily of the Valley, *Amaryllis*, a small Orange tree, a white Ribes, *Rhododendron fragrans*, and some Hyacinths.

Messrs. Cutbush's collection, which won the second prize, contained several very nice Azaleas and Epacrises—*Rhododendron cawthraense*, *Kalmia latifolia*, Persian Lilac, *Polygonatum multiflorum*, *Dielytra*, *Amaryllis*, *Tournefortia* and *Rex Rubrorum Tulips*.

No collections of Forced Flowers were exhibited by amateurs; and in the classes for *Amaryllis*, Epacrises, Acacias, and Geraniums, there was likewise no competition.

Lilies of the Valley were exhibited by Messrs. Veitch, and Mr. Salter, of Hammersmith, who stood respectively first and second; and of Chinese Primulas there were several collections, the prizes going to Mr. Taylor, Mr. Todman, gardener to R. Hudson, Esq., Clapham Common, Mr. Blogg, and Mr. Cutbush, who also received a second for double Primroses.

In the Miscellaneous Class, first prizes were awarded to Mr. W. Paul, and Messrs. Cutbush, for collections of 50 Hyacinths. These occupied a stage by themselves at the end of the room, and as specimens of culture were well worthy of the distinction which they received. Messrs. Cutbush also received a similar award for a collection of 50 Tulips, which afforded a most brilliant display, red and yellow being the predominant colours. The following are the names of the principal varieties:—*Alba regalis*, *Belle Alliance*, *Berangaria*, *Bizard Pronkert*, *Cardinal*, *Cardinal's Gold*, *Ceise Primo*, *Comte de Vergennes*, *Couronne Pourpre*, *Cramoisie*, *Duchesse de Parma*, *Duc d'Arenberg*, *Duc d'Holstein*, *Epaminondas*, *Grootmeester*, *Marquis de Westerde*, *Monument*, *Rouge Luisante*, *Superintendent*, *Standard Royal*, and *Yellow Prince*.

From Messrs. Veitch came a miscellaneous collection of flowering plants, which consisted of Azaleas of various kinds, handsome bushes of *Eriostemon nerifolium* and *densifolium*, a fine *Cypripedium villosum*, *Imantophyllum miniatum*, *Amaryllis*, *Boronia pinnata*, *Chorozema ilicifolia*, a beautiful little *Rhododendron javanicum*, and some other plants. To this a first prize was also given; and Mr. Bull, of Chelsea, was awarded a second for a collection of new and rare plants, among which were *Hippomane longifolia*, *Cordylina indivisa*, *Araucaria Cunninghamii glauca*, *Dracæna gracilis*, a fine plant of *Cibotium princeps*, the curious *Agave filifera*, *Anthurium leuconervum*, and other interesting plants.

Equal third prizes were given to Mr. W. Paul and Messrs. F. & A. Smith, of Dulwich: to the former for a box of beautiful cut blooms of Camellias, and to the latter for six stove plants, consisting of *Croton variegatum*, *Ananasia sativa variegata*, *Cyanophyllum speciosum*, *Cyperus alternifolius variegatus*, *Sphaerostema marmorata*, and *Platynerium grande*. The same firm also contributed greenhouse plants, a miscellaneous collection of flowering and foliage plants, the pretty *Eriocnema marmorea*, *Hemerocallis elegans foliis variegatis*, the half-green half-white leaves of which showed to great advantage; also, several varieties of Cyclamens; and Mr. Todman had an extra prize for three fine pots of Roses—*Madame Willermoz*, *Géant des Batailles*, and *Jules Margottin*.

A box of the lovely rosy purple bracts of *Bougainvillea speciosa* came from Mr. Wainwright, gardener to W. C. Thornhill, Esq., Kettering, and excited much admiration on the part of the ladies. Some beautifully executed artificial flowers were also exhibited by Mrs. James Stoddart, of Victoria Station, Pimlico. These are formed of the delicate Chinese rice-paper, and represented with wonderful accuracy the flowers from which they are copied. On the present occasion they were arranged on opaque glass stands as dinner-table decorations, the upper portion of the stand being filled with Roses, Camellias, &c., whilst *Convolvulus* or Ferns twined round the base and stem, the whole having a light and elegant appearance.

FLORAL COMMITTEE.—A Meeting of the Floral Committee was held in the morning, and the plants brought forward for their consideration formed a part of the Exhibition.

Mr. Bull, of Chelsea, had *Trichomanes anceps*, a very handsome species, for which he received a first-class certificate; and a similar award was given for *Yucca lineata lutea*, the foliage of which was dark green, with a broad yellow band running down the centre of each leaf. *Yucca Stokesii* had leaves with yellowish-white variegations, but its appearance was not handsome. In *Yucca quadricolor* was another variegated kind; the leaves were striped with red at the base, becoming yellow towards the point, and white in the old leaves.

Mr. Bull had also *Anacochilus argyræus*, the lanceolate leaves of which are of a deep green, with a silvery band of a similar shape to that of the leaves running from the base to the apex. It received a second-class certificate, as did also *Limatodes alba*, from Messrs. Low, of Clapton. This has pretty pure white flowers in abundance, and comes from Moulmein.

Cypripedium Dayi, exhibited by J. Day, Esq., of Tottenham, received a first-class certificate. Its light green foliage was handsomely variegated with irregular markings of a darker green, and the flowers were also very ornamental.

Messrs. Veitch, of Exeter and Chelsea, had *Barkeria Skinneri superba*, with a profusion of rosy crimson flowers, and on account of its superior merit it gained a first-class certificate; a like distinction being also awarded for *Azalea President Claeys*, which was covered with a profusion of salmon and white flowers. Twelve varieties of *Lycaste Skinneri*, some of which were very beautiful, were exhibited by the same firm, and were considered so interesting as to deserve a special certificate. A variegated *Hibiscus*, from New Caledonia, and having the leaves prettily variegated with white and red, received a commendation. Messrs. Veitch had also *Epacris densa*, with small white flowers, from Western Australia.

From Mr. W. Paul there came a collection of seventy-two varieties of English Hollies, exhibiting many curious and ornamental forms, and which were in illustration of a paper by that gentleman, which was read before the Committee. They received a special certificate.

Of other objects, *Parochetus communis* came from Mr. Pottle, gardener to B. D. Colvin, Esq., Little Bealings; a yellow variegated form of *Araucaria imbricata*, from Mr. Fowler, gardener to the Earl of Stair; *Helleborus olympicus*, came from Mr. Harrington, gardener to Dr. Lindley, Acton Green; and a species of *Begonia*, from South Africa, from the Society's garden, the flowers were orange yellow, and not remarkable for their beauty. Mr. Parker exhibited *Rhododendron Countess of Haddington*, with very large white flowers, delicately tinged with red; and several seedling *Cinerarias* came from Mr. Wiggins, of Isleworth, of which *Formosum*, with very large flowers, white with a broad purplish-crimson edge, appeared well suited for conservatory decoration; *Dark Beauty*, *Princess Alexandra*, and *Beauty of Denmark*, were also pretty varieties.

The large conservatory was extremely gay with Hyacinths, Tulips, *Dielytra*, and other forced flowers, beautifully arranged, and looked even more attractive than the flower show itself.

FRUIT COMMITTEE.—C. W. Strickland, Esq., in the chair. The challenge repeated by Mr. Thomson, of Dalkeith, to Mr. Tillery, of Welbeck, to show old Black Grapes against new Black Hamburgs was expected to come off at this Meeting; but Mr. Tillery wrote to say that on account of the weather, which has been unfavourable to the keeping of old Grapes, his were in such a condition that he did not think it worth-while to send them. Mr. Thomson, however, sent excellent bunches of new Black Hamburgs, which were everything that could be desired both in colour and flavour, and which were considered superior in flavour to the very fine *Barbarossa* exhibited by Mr. Park, gardener to G. Vernon, Esq., of Retford, and those of Mr. Crawshaw, of Cyfarthfa Castle. The *Barbarossa* of Mr. Park were splendid bunches, and the flavour so much superior to what is usually found in *Barbarossa* that the Committee awarded them a certificate of merit; yet they were nevertheless inferior to Mr. Thomson's Black Hamburgs. The *Barbarossa* of Mr. Crawshaw were very fine also; but they were not so rich in flavour as the former. Mr. Tillery sent some good bunches of *Trebbiano* richly flavoured, but thick in the skin, as that variety generally is.

Mr. John Pottle, of Little Bealings, near Woodbridge, Suffolk, sent a handsome fruit of *Prickly Cayenne Pine*, which, however,

was not allowed to be cut, and, therefore, it could not be ascertained whether it was good or good for nothing.

Mr. Park, of East Retford, also sent dishes of d'Auch Pear, Beurré de Rance, and Glon Moreau, all of which were inferior in flavour.

C. W. Strickland, Esq., of Hildenley, exhibited a Yorkshire kitchen Apple of good merits.

Mr. B. E. Cant, of Colchester, sent a dish of Twining Pippin. It is a small, round, dessert Apple, with tender and juicy flesh, sweet, and with somewhat of the flavour of the old Golden Pippin. In good condition for the season.

A seedling culinary Apple was received from Messrs. Wood and Ingram, of Huntingdon, which was remitted to the Secretary to be cooked and reported upon.

Mr. Rivers, of Sawbridgeworth, sent some of the Early Ten-week Potatoes, and Messrs. Ivery & Son, of Dorking, exhibited fruit of an excellent Cucumber, which they called Ivery's Winter Champion, but which was not considered different from some other first-rate sorts already in cultivation.

THE Royal Horticultural Society has done many bold things in its day, but it never did a bolder one than when it essayed a flower show in February; and we should think the experiment is not likely to be repeated, the result being just what one would have anticipated. One was sure that the skill of our horticulturists would be put forth to produce something worth seeing, while the earliness of the date would prevent much from being sent, that the company would be sparse, and that shivering would be the order of the day. Unfortunately, too, for the Society, the Prince of Wales's levee was fixed for the same day; but, fortunately for it, the wind had shifted from its cold quarter, and, under the influence of a south-west wind, warmth was to be obtained by moving briskly about. What it could have been in that cold corridor with a north-easter we were happily only left to conjecture. But even the brilliancy of the Hyacinths and the fragrance of the Lilies of the Valley could not beguile one into the notion that February and a flower show are a well-matched pair. March is even early enough, but three weeks make a serious difference both to flowers and visitors at this season of the year.

One side of the corridor (which formed a part of M. Veillard's unfortunate share of the refreshment department of the Great Exhibition) was filled with plants contributed by Messrs. Veitch, Cutbush, Smith, and Bull, besides a not-very-interesting-looking—though doubtless they were so—collection of Ilex by Mr. W. Paul; the other half by Hyacinths, Crocuses, Primulas, and Tulips, of which the finest collections were sent by Messrs. Cutbush & Son, of Highgate, and Mr. Paul, of Waltham Cross, the contributions sent to the Floral Committee being at one end and a very handsome collection of Hyacinths at the other, forming two groups, sent by Messrs. Cutbush & Paul.

Many of the plants were old and well-known ones, grown with a considerable amount of care, but bearing, many of them, clear evidence of being strongly forced to meet the requirements of the early date named for the Show. In Mr. Bull's collection were some fine plants of novelties, the grand Fern Cibotium princeps being conspicuous for its fine fronds. He had also good plants of Cordyline indivisa and Agave filifera. Why this collection was awarded a second prize I could not quite understand, for it seemed for this time of the year to have merited a first, and there was no other in competition with it.

In Mr. Veitch's collection there were some nicely-bloomed plants, and the same may be said of Mr. Cutbush's; but leaving these to be dealt with by other and abler hands—though I regretted much to observe the absence, from illness, of Mr. D. Beaton, to whose graphic pen we have all been indebted for reports of these shows—I pass on to those flowers about which I profess to know a little. Hyacinths were, considering the early date, most wonderful, and were fine for any season, Mr. Cutbush maintaining the position which he has ably held for many years, though evidently great exertions had been made by Mr. Paul to outstrip him; but there was a refinement and evenness about his flowers very dear to the eyes of a florist, which the others lacked, and which doubtless gained the day for him. Their growth and vigour were something surprising. Of Whites he had Mont Blanc, a fine spike, with large bells closely arranged; Grandeur à Merveille, bluish white, with very large spike; Mirandoline, moderate-sized bells; Snowball, one of the finest of Hyacinths, the bells are beautifully circular and closely arranged.

In Reds there were Von Schiller, a deep salmon pink, large bells, very close, and an immense spike; Princesse Clothilde, delicate pink, striped with carmine; Macaulay, a noble spike, crimson, large bells, and closely arranged. In Blues there were Baron von Tayll, a useful and well-known flower; General Havelock, very dark purple, one of the finest of Hyacinths—the bells are large and closely arranged; Garrick (double), dark blue, with large bells. In Yellows, Ida, a deep-coloured flower and very attractive.

In Mr. Paul's 12 there were, besides some of those already named, Howard, a salmon crimson, with stripes of deeper colour, bells close and spike good; Grand Lilas, a fine and useful azure blue flower; Queen of the Netherlands, a good pure white; Solfaterre, a brilliant orange scarlet, large bells and spike; Charles Dickens, a good greyish-blue with an excellent spike; Lord Wellington, Marie, and Mimosa.

Of the prizes offered by Mr. James Cutbush, about which the Society behaved so oddly, altering the conditions on which they were offered, the first was taken by Mr. A. Carr, gardener to G. W. B. Noakes, Esq., Highgate, with a dozen distinct varieties of good growth, and very similar to those with which Mr. Cutbush obtained his first prize, having amongst them also well-grown plants of La Dame du Lac, a useful rosy pink; and Alba Maxima, a fine white, with large bells closely arranged.

The Tulips exhibited by Mr. Cutbush were excellent. Amongst them were Fabiola, rosy violet and white; Rouge Luisante, fine rose; Keizerkroon, golden yellow and red; Couleur Cardinal, scarlet; Vermilion Brilliant, glowing scarlet; and Proserpine, rich silky rose. In the large collections of Hyacinths, I noticed in Mr. Cutbush's collection, in Whites, fine spikes of Paix de l'Europe, Grandeur à Merveille, Mont Blanc, Miss Burdett Coutts, a splendid flower. In Reds, Solfaterre, very fine; Howard; La Dame du Lac; Reine des Jacinthes, bright crimson, good bells; Madame Hodgson, very fine pale pink; Princess Charlotte, delicate rosy pink, excellent; Mrs. Beecher Stowe, deep rosy pink; Victoria Alexandrina, intense crimson. In Blues, Orondates, an old but very fine flower; Regulus, pale blue; Argus, a bright blue with very distinct white eye; La Nuit, very dark, nearly black; Mimosa, deep purple, very nearly black.

In Mr. Paul's, which were placed equal first, there were some fine trusses. Peineman, an extraordinarily large flower with immense bells, but somewhat loose, of a light greyish-blue colour; Madame Hodgson, Tubiflora, a fine bluish white; Argus, very good, &c.

Several interesting subjects were brought before the Floral Committee. Of Orchids, Cypripedium Dayi, a very beautiful variety of Ladies' Slipper, received a first-class award; as did also Barkeria Skinneri superba, exhibited by Messrs. Veitch and Son. Limatodes rosea alba, exhibited by Messrs. Low & Son, of Clapton, was awarded a first-class certificate. Mr. Bull sent a very beautiful Yucca lineata lutea, with rich golden stripes, to which a first-class certificate was awarded. Trichomanes Pfeuri, a very beautiful Fern from the West Indies, also first-class; and Anectochilus argyæus, which was also given a first-class. Mr. Veitch exhibited a good plant of Azalea President Claeys, of the style of Etoile de Gand; and Duc d'Arenberg, in good bloom, although bearing evident marks of having been strongly pinched to get it into flower. It promises to be a useful and handsome variety.

Several Cinerarias were exhibited. The one that struck me as the best there was Sunbeam, exhibited by the Messrs. Smith, of Dulwich—a very brilliant crimson-edged variety, unlike, so far as I remember, anything we have, moreover well shaped, with the white and scarlet about evenly balanced. They had also a charming little greenhouse plant, Monochaetum sericeum multiflorum, with beautiful crimson mauve flowers, making a lovely object for a basket or pan at this season of the year.

Some branches of the beautiful Bougainvillea speciosa, with its brilliant mauve-coloured bracts, were exhibited by W. C. Thornhill, Esq., Kettering near Northampton, and were as usual the admired of all admirers.

Might one ask whether nothing can be done at these spring shows to give a little warmth to the place where the exhibitions take place? It is possible with great coats, and the ample appliances that the fairer part of creation can make use of to keep oneself from being chilled, though I confess to having gone into the Exhibition building in order to get a good long stretch of a walk. But the poor plants have nothing of the kind, and brought, as many of them are, out of a temperature so high, to one at this season of the year some 40° less, perhaps, I should

think their poor nerves get a shock from which it is very difficult to recover them. They ought, one would think, to be provided with some better place of sojourn than a cold draughty corridor at the sunless side of the gardens.—D., *Deal*.

DO OUR SOILS DECREASE IN FERTILITY?

YOUR correspondent "J." says, in his essay entitled as above, that *Fleta* records in the year 1290, or thereabouts, that six bushels of Wheat were the produce per acre (*vide Fleta*, ii., cap. 8); but he ought also to state on sure authority what was the capacity of a bushel in *Fleta's* time, or is the word properly translated bushel?—N.

[*Fleta* says, that the English penny shall weigh 32 grains of Wheat taken from the middle of the ear; that 20 pennies shall make an ounce; that 12 ounces shall make a pound; that 8 pounds of Wheat shall make a gallon, and 8 gallons shall make a London bushel (*Bussellum*), which is the eighth part of a quarter.—(*Fleta*, lib. ii., c. 12, §. 1). In fact, the above quantities were enacted in 1267 by statute 51 Henry III.]

A FEW DAYS IN IRELAND.

STRAFFAN HOUSE.

ON leaving the princely magnificence of Carton, a beautiful drive brought us to Maynooth, and right opposite the gates of the celebrated College. Years ago we had seen the plans of the building, and had so read of the internal arrangements, and the systems and rules carried out in the instruction and management of such a number of students, that we seemed to look on a place with which we were somewhat familiar, and, therefore, regretted the less our inability to stroll through its more public premises. On the left of the entrance is situated the picturesque church, and on the right the romantic ruins of the castle of the Fitzgeralds, which was built by John, sixth Earl of Kildare, in 1426. The castle was besieged in the time of Henry VIII. by Sir William Brereton, and so great was its strength and the bravery of its defenders, that the besiegers might have besieged in vain, but for the treachery of an adherent within, more influenced by Saxon gold than Celtic honour. Abhorring, as we do, the wildness and extravagance of Lynch law, yet we could not but feel that the betrayer met with a fitting retribution. He had cautiously stipulated for a money recompense, but not for personal safety; and the General, though profiting by the treachery, showed his sense of the wrong by first paying the man the sum agreed upon, and then ordering him to be hung.

The massive keep and ruins are now densely clothed with Ivy, as if for the purpose, as Irishmen will tell you, of concealing the ugly holes made by Cromwell. Almost every nation has its hero and its demon—the man for whom no praise or adulation can be too great, and the man whose memory is looked upon as the incarnation of all that is bad and mischievous. Cromwell, no doubt, is the great demon of the past in Ireland, so far as devastations and ruins are concerned. There seemed to be no clear idea of the definite Cromwell. He might be the Cromwell of the Commonwealth, or the Thomas Cromwell, Earl of Essex, Secretary of State to Henry VIII., and under whose instructions General Brereton, no doubt, acted in the case of the above siege, and who, whatever his faults, stood nobly by Cardinal Wolsey when every other friend forsook him, when he lost favour and influence with the fickle and ungrateful king. Both Cromwells had so much to do with carnage, pillage, and devastation, that we may well excuse the country people making one Cromwell of the two, and hissing out the name as they passed an old battered ruin in terms far from complimentary.

Convinced that we have given more than enough of our attention in the times that are past to something akin to worship of warrior heroes, and paid too much veneration to concentrated energy and mere physical power, it is delightful to find, prompted by whatever cause, great numbers of our brethren turning away from such idolatry, and giving more of the homage of their hearts to the beneficent powers of goodness, intelligence, and useful industry. It was, therefore, with a sense of relief that we passed these ruins and the remains of another castle on the hill of Rathcoffey in such a fine imposing position; crossed the grand canal and the railway for Galway, looked from the hill of Windergates to the rich pastures of Meath in the distance, and now come to the well-cultivated lands of Mr. Barton, which

here join those of the Duke of Leinster, and anon reach the village of Straffan, with its neat cottages, handsome places of worship for Catholics and Protestants, and its flourishing national schools for boys and girls, all speaking of intellectual advancement, social progress, agricultural improvement, and national prosperity—themes far more interesting for discussion and converse, and a thousand times more instructive, than any arousing of the feelings of prejudice and clanship by the keeping alive the memory of the dark and wild deeds of the olden times.

Straffan House, the noble residence of Nathaniel Barton, Esq., and the Hon. Mrs. Barton, is about seventeen miles from Dublin and two miles from the Straffan Station of the Great South-Western Railway. The estate is a very large and compact one, and, with the addition of what is let to over a hundred tenants, Mr. Barton holds 1600 acres in his own hand, under the very able management of his land steward, Mr. Littleboy. This is again divided into four farms, one of which, the home farm, with grass land, wood, kitchen garden, and pleasure grounds, contains about 300 acres, is bounded on one side by the river Liffey, and on the other sides by a high substantial stone wall. We heard Mr. Barton spoken of as fond of flowers, and the Hon. Mrs. Barton as an enthusiastic gardener, who had the pleasure and the privilege of having her ideas comprehended, discussed, and reduced to practical development by Mr. Kelly, one of the best, most indefatigable, industrious, and happiest of gardeners we ever had the pleasure to meet with. Add to this, love of the beautiful, the desire of the proprietors not merely to foster every agricultural improvement, but to elevate the condition of the working people socially and morally by bettering their homesteads and giving abundance of employment; and two things will at once be seen: First, that these proprietors are anxious to act up to the responsibilities of property; and second, that the results obtained demand a fuller and larger inspection, and more ample details than we could possibly give from our short visit.

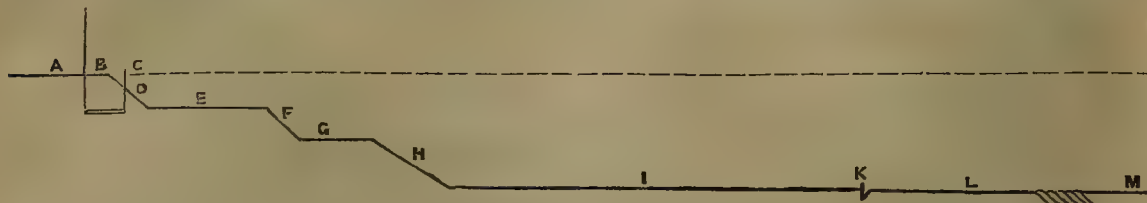
On passing the village we came to the neat lodge, with a noble arch of Ivy over the gateway, and entered the well-kept approach, 18 feet in width. Passing at first through an old wood, then through an open lawn, with specimen trees and Thorns studded upon it, and fine views of a hill planted in the distance, we reach what seemed massive plantations of evergreens on the left side, but which, on examination, proved to be temporary shelter for groups of the finer and most-prized Conifers; and this, with other planting, conceals the kitchen garden and the stables, until you reach the front lawn of the mansion on the right, backed by masses of timber. Note that from the entrance gate to the entrance hall no obstruction of gate or hurdle was met with, that even the mansion could scarcely be seen until you came right up to it; and thus none of the views from the garden front could be observed unless from that side of the building. Our first entrance was to the stable and coach-yard, close to the mansion, a large square, substantially built with stone, and justly considered one of the best and most convenient in Ireland.

The mansion itself is finely situated on a shelving platform, the ground rising behind the entrance front, and sloping from the garden front to the river Liffey, which is about 400 yards distant. The rich balustrading round the mansion gives it a very elegant finished appearance, and the same may be said of its continuation round the new terraced and panel gardens. From the windows in the garden front and from the upper terraces fine views are obtained of the Wicklow mountains, and near at hand of the hill of Lyons, and the woods and plantations that adorn the residence of Lord Cloncurry. Bringing the eye back for a near view there is spread out before it the series of terraces, sunk panels, and Box gardens, until, passing on to the Liffey and its bright waters, it goes beyond, and rests on a large extent of rich meadow land, on which numbers of sheep were feeding, and cattle up to their knees almost in herbage. Both above and below there are fine picturesque views on the Liffey. Here, to permit of the view, all is comparatively open; but near at hand is a nice island, which has been made the most of by winding walks, a neat cottage in the centre, and a nice suspension bridge for keeping up the communication with it and the main land.

The plan of the main features of these new gardens was given, we understood, by Mr. Howe, and reflect great credit on his judgment and artistic taste. The carrying-out of those plans, and finishing all in the best style, devolved upon our friend Mr. Kelly. Mr. Kelly's own account of it would be sure to be that the Hon. Mrs. Barton did all the work, and he helped her.

Well, it has been well managed between them. It is no uncommon thing to meet with gardeners who are ever harping on the dolorous strains that their merits, their genius, their abilities, have never been yet discovered or appreciated. It was, therefore, very pleasing to find a man of undoubted talents almost

refusing the simplest compliments to his handiwork, the results of no little planning and head-work, and seemingly quite jealous that any such commendation would be apt to interfere with the honour due to the superior intelligence and the more cultivated and refined taste of his much-esteemed employers.



The accompanying cross surface line is supposed to pass from the centre of the fine portico on the garden front along the centre of the steps and the main walk, through terraces and panel gardens, right up to the boundary balustrade, and then over lawn and meadow on to and beyond the river. From the centre of this walk the grounds extend on each side, at the panel gardens, 110 feet, making the space here enclosed 220 feet in width. A will represent the ground floor of the mansion; B, porch across area; C, balustrade, after a wide landing in the porch, part of the staircase of eight steps is formed there, which thus reduces the sloping bank of turf D from the balustrade; E is a level terrace 220 feet long, with a gravel walk of 12 feet in width in the centre, and level grass verges of $7\frac{1}{2}$ feet in width on each side. This walk on the west side is continued, and winds southwards amid mazes of shrubberies, and on the east side, after passing the terrace and small garden close to the site of the conservatory it extends with graceful curves eastwards to the kitchen garden. F is a flight of six steps, with sloping bank on each side; G is a level terrace of grass; H, a grass slope, with twelve steps of Wicklow granite the same width as the walk, 12 feet; I is the line continued up to the balustrade—a length of 87 feet; L is a broken line of 900 feet to the river; and M, the rich pasture on the opposite bank. On each side of the line I, set off 110 feet in another straight line, connect these at the ends and sides with lines at right angles, and you have a parallelogram 87 by 220 feet. Divide that parallelogram from east to west into four, and you have the rough features of these panel gardens, and Box gardens on grass.

The panel on each side of this main walk is sunk a little more than a foot below the level. With the addition of a level verge of turf at the base of the bank H, and the same at the other end next the balustrade, this panel is bounded on the opposite side from the middle walk and at both ends by a gravel walk about 7 feet in width. Beyond this walk on each side the other spaces are devoted to lawn, on which is laid out a Box garden with beautiful artistic tracings; and the spaces are filled with different gravels, as in similar side gardens at Kensington. The panels on each side of the wide middle walk, after these necessary deductions of walks round, levels, and slopes, are 36 feet in width by 57 feet in length, each having a noble granite vase in the centre. The tracings and artistic beauty of these panels are also very interesting, and part of the colouring is obtained from flowers, and part from coloured gravels, not merely between groups and clumps but as groups. There being no walks necessary on the lawn on each side of these panels it is 60 feet in width, and of course 87 feet in length; and on the panels respectively are the beautiful box-coloured gardens already referred to, which, so far as we recollect, appear to all the better advantage from the panels being sunk, and the Box gardens placed on a slope rising to the side balustrade. The design of the plans and the carrying them out give great credit to all concerned. We have, however, that sense of right which would lead us to avoid giving any new plans of gardens to the public without the full sanction and approbation of the artist.

These Box gardens being all of a piece presented to the eye a harmonious unity, as all the colouring of earth and gravels was on one level, whilst the growing Box gave something like life to the whole. So long as ladies are contented day after day to look upon the same appearances in part of a garden, let it be winter or summer, just as they would look down on a fine-patterned carpet on the floor of a room, or the rich artistic papering on its walls, so long will this style of gardening remain popular. In the planting of the panels, we could see nothing with which to find fault; in the surrounding groups with suitable-

coloured gravel, there is just as little to offend the eye; but the filling part of the figures with flowers and other parts as conspicuous with a mere level-colouring of gravel and of earth, seemed to be incongruous, even on the question of unity of outline alone. Suppose we look upon a carpet which is doubly pleasing from the brilliancy of its colouring and the artistic beauty of its tracery, should we, whilst sitting at the parlour fire, consider that carpet was enhanced in beauty by some parts of its colouring being raised about 18 inches, or some other parts depressed as much below the general level, and yet the beauty greatly consist in the whole surface being seen at once? We need not, however, dwell upon this subject, having already treated the matter somewhat largely, and even somewhat incidentally the other week. It is just probable that we may be quite wrong, but at present we are inclined to look on such mixtures as failures, unless where the colour of the flowers and the colour of the gravels as clumps are on a similar level.

In a conservatory in the stove part we noticed a splendid plant of the Brazilian Fern, *Didymochlæna truncatula*, also of *Gleichenia dicarpa*, pubescens, microphylla; large plants of *Gymnogramma Massoni*, *chrysophylla*, *variabilis*, *pulchella*, &c., and fine plants of the better sorts of *Adiantums*, and other Ferns; and under a glass protection a nice collection of *Anectochilus*, with beautiful plants of fine-leaved *Begonias*, and noble plants of the *Hedychium coronarium*, scenting the air with the rich fragrance of their milk-white flowers. In the greenhouse part the column and roofs were richly wreathed with masses of the singular flowers of *Rhodochiton volubile*; and the most conspicuous flowers were fine *Fuchsias*, *Balsams*, *Cockscombs*, &c. Huge masses of *Asplenium marinum* were set on the borders, chiefly for future transplanting; and plenty of *Camellias*, *Azaleas*, &c., were receiving their suitable treatment elsewhere. The flower-beds near the conservatory were very neat and compact. Dahlias were grown in fine style.

Passing along the walk from the terrace already referred to, we soon come to, and pass along the boundary wall of the kitchen garden, the outside of which near the walk is covered with creepers and other plants needing a little protection, as *Jasmines*, *Tea* and climbing *Roses*, *Ceanothus*, *Lonicera*, &c. Between the walk and the wall is a narrow ribbon-border of three rows, ranging thus from the wall—yellow *Calceolaria*, *Tom Thumb Geranium*, and *Variegated Alyssum* next the grass verge. This border from the density of the plants and the abundance of the bloom looked very nice, and was 300 feet in length. We are not quite sure of the position at this distance of time, but we have a vivid recollection of another ribbon-border that looked very nice, and which was thus planted, beginning at the back—Scarlet *Geranium*, yellow *Calceolaria*, Purple *King Verbena*, *Saponaria calabrica*, *Variegated Alyssum*, and *Nemophila insignis* and blue *Lobelia* mixed. Here the *Nemophila* seemed to do as well in the autumn as at Carton.

On entering the garden gate the eye was even more dazzled with beauty than on the new terraces, as two massive parterres presented themselves, one on each side of a central walk, the parterres being backed at the farther end with a range of vinerias and a greenhouse in the middle. We will revert to this garden presently; meanwhile we may state that the kitchen garden seemed large and well cropped, the trees in fine order, the *Apricots* against the wall being, especially, noble specimens. Here, as well as at the terraces, the walks and edgings were in excellent keeping; and a glance at the frames would tell you at once that neither there nor elsewhere would a foot of glass ever be idle at Straffan. The wood of the Vines in the earliest house in the range seemed to be in fine order, and good Grapes were hanging:

in the late house, which might have pleased Mr. Kelly better with a shade of darker colour could he have dispensed with cropping the border in front with flowers, to bring it into character with the parterres referred to, from which it is also separated by a walk of 9 feet in width. It is not the robbery of the border in such circumstances by the flowering plants that does so much damage as the shading of the ground from the sun's rays; and then from a low temperature and frequent dryness the roots are inclined to go too deep; though we do not think Mr. Kelly's good Grapes were showing signs of that. Immediately behind such parterres, and in front of houses, bare earth-borders would hardly be in character; but as these borders are not very wide, a compromise might be effected by making the whole into a sort of terrace walk by covering thinly with gravel. Manure water could be given at any time, other manures in winter; and as then the gardens would not be so attractive, a covering of dung and leaves might be applied to entice the roots to the surface. A line of small baskets or vases would break the monotony, and yet do little to prevent the sun beating on the border, or, what would be the same thing, the gravel or sand on its surface. A slight dressing of fine gravel every spring would make it all look in good order.

One of the most useful helps that Mr. Kelly has, and which he devotes to many purposes, is a house for Melons and Cucumbers, 50 feet in length, 13 feet in width, and 8 feet from floor to ridge. The house is not quite a span, the sash on one side being about 9 feet and on the other side about 6 feet. The door, therefore, of 2 feet 10 inches is not in the centre, but 6½ feet from one side, and 3 feet 10 inches from the other. The path goes down opposite the door, leaving a bed on one side of 5 feet in width, and on the other of 2½ feet; the first intended for Melons, and the second for Cucumbers. These beds or pits on each side of the pathway are rather more than 3 feet from the floor. Under the wide pit are two four-inch pipes for bottom heat and the same for top heat, and under and above the narrow pit the same quantity of two-inch piping. Like many more, Mr. Kelly found it was difficult to give the Melons and Cucumbers in the same division the exact treatment they required in different circumstances, and intended in future to grow them separately back and front in the different compartments.

On our visit about the middle of September were five *Excelsior* Melons in one division, and a fine crop of *Lynch's Star* of the West Cucumber in another, which Cucumber seemed to have a good deal of the breed of the *Syon House*. During winter and spring one or more of these compartments is used for forcing and forwarding what is wanted for use and ornament; and what is not so used is stored with cuttings and bedding plants from floor to ceiling or ridge.

R. FISH.

(To be continued.)

THE MILD WINTER.

THAT the present winter has been exceedingly mild will be generally admitted, but instances like it have occurred before.

The autumn of 1843, if I remember rightly, was very mild, so much so that Mushrooms were reported to be growing in many places up to Christmas, and yet after that we had a winter of more than average severity. The autumn of 1853 was also mild, as I remember gathering some variegated *Geranium* cuttings in the first week of February, that had stood out of doors unprotected and they grew, and yet we had a tolerably sharp frost immediately after that.

The present winter, therefore, is not without a precedent so far. The frosts we had in November destroyed most tender plants, or, at least, it so far injured them that they were removed; but I find a rustic vase in front of my cottage, containing variegated *Geraniums*, has escaped, the plants being yet alive and shooting-out fresh leaves, although in no way protected excepting from the west and north winds. Other *Geraniums* that were left partly with the shelter of shrubs are still green; and *Calceolaria* cuttings put into a cold pit have grown and many of them are knotted for flower, while the old ones in the open border are quite green and as fresh as in September. That they and other plants will receive a check there is every probability, but the sooner the better, as the buds of fruit trees and other plants are advancing too fast; and in the kitchen garden line a mild winter invariably forwards Cabbage plants to the point of running to seed, which would not be the case in a hard one. Peas, too, advance too far to withstand the cold of the late spring, and become what is termed "black in the leg,"

and die. Everything, however, in the greens or Colewort way is in more abundance in mild winters, as, likewise, is Broccoli, Spinach, and other winter crops.

I wonder if the West-Cornwall gardeners, whose doings were so ably reported to us some time ago, are not apprehensive of a late spring frost proving fatal to their Potatoes, since there has been little or none during the winter? However, let us hope for the best, and ere this reach the reader there may be an important change, and our next complaint may be of cold.

My register, as recorded in this Journal for January 6th, shows a greater proportion of west and south-west winds than in former years, and whether this be the cause or effect of the continued mildness is for others to determine. I find, however, that the subject has attracted notice elsewhere. That the present season has been a moist one is admitted, and yet the rainfall of the autumn and up to the present time has not exceeded an average; only falling, as it has, in almost daily dribbles it has kept the roads and every other place dirty. Of the kind of weather in store for us there is no lack of predictions; but, whether after all, any of these prophecies are based on anything better than a mere guess is more than I can tell, and judging from the number of times they are wrong, it would seem that they are nothing more than that.—J. ROBSON.

TRITOMA ROOPERI.

TRITOMAS are allowed by all to be amongst the most showy of all our hardy border plants. *Tritoma uvaria* makes a most telling display, either as single specimens, or in back rows to ribbon and other borders. It is grand throughout August and September. I had a row of this, this autumn, 40 yards in length, with 700 heads of bloom at one time. *T. Rooperi* is also a magnificent plant, coming into bloom in September, and throwing up a succession of spikes all through the winter if the weather be at all mild. Notwithstanding our sharp weather in November, it has been in flower here all winter, and continues in flower at this date (January 16). In October it throws up its flower-stems to the height of 5 and 6 feet, and the individual heads of bloom last in flower twice as long as does any other of the *Tritomas* that I know of. Like *uvaria*, I believe there are inferior varieties of *Rooperi*.

It has been said that these *Tritomas* come true from seed, but I have proved that the best variety of *uvaria* does not; and that from one packet of seed you may get a great many varieties—few, if any, that I have raised being at all equal to the original. A cross between *Rooperi* and *uvaria* would be likely to throw some fine varieties.—D. THOMSON.—(*Scottish Gardener*.)

CRASSULA COCCINEA AND IPOMÆA LEARII NOT BLOOMING.

YOU will oblige me much by advice how I am to manage six plants of *Crassula coccinea*, which did not flower last summer. I have kept them in a cool greenhouse all winter close to the glass, and I have given them very little water. I wish to keep them in pots, and I should like to bloom them this next summer if I can.

I have a plant of *Ipomœa Learii* in a pot, that did not flower last year. Had I better shake it out and repot it in some good soil? I am obliged to grow it in a pot.—L. C.

[Keep your *Crassulas* as they are, and give a little water as soon as you see signs of flagging, or the tops knotting for bloom. You must not think of cutting now, as you will cut all the flower-buds.

Shake out the *Ipomœa*, and give it some rich, rather stiff loam firmly packed. Then cut the head considerably of all the smaller shoots; from every well-ripened bud you may expect a shoot bearing flowers. If you kept the plant in a shady place in summer and autumn, there will be few flowers, if otherwise, in the sun, you will have plenty of bloom on young shoots.]

PLANTING WELLINGTONIA GIGANTEA.—A gentleman whose information is of a very sound and practical nature, respecting the many new and ornamental Conifers, informs me of a case where a *Wellingtonia* has been planted upon an artificial mound made 7 feet high, and which the *Wellingtonia* has now covered with its branches, growing in a sweeping, drooping manner. Seven feet in height thus obtained is a desideratum in many cases when this handsome tree is planted.—W.

PLANT-JUDGING.

THE object of our present remarks is to offer a few observations upon plant-showing generally, and to point out what we consider ought to be the guiding principles in awarding prizes. In judging plants, various things must be taken into consideration—not only the health and general appearance of a specimen, but also the excellence of individual perfections—qualities which appear insignificant when considered separately, but which when viewed collectively, constitute perfection. Thus, supposing a plant had been beautifully grown, was of fine form, had short-jointed wood and clean and healthy foliage, but had flowers in insufficient quantity, ill-formed or badly-coloured, or flowers insufficiently above the foliage, or with unusually long footstalks—these would be great defects, inasmuch as flowers being the aim and end of the cultivator, and the main object of attraction, it is indispensable that they be of the finest and most perfect form and colour. However fine a plant may be, if it is deficient in flower, or the bloom is of bad quality, it is a defect, and in like proportion if a plant is ill-formed or has bad foliage, that also is a defect; but if a plant is unhealthy, that is a decided disqualification, for as prizes are offered to reward skilful cultivation, if

the exhibition shows the want of skill, that is a disqualifying point. A plant to be perfect must be of symmetrical form, be short-jointed, and furnished with robust and healthy foliage from the base upwards. The form should not be formal, neither should the plants bear a rough and uncultivated appearance, but it must be graceful and easy in character, and while it bears the impress of art, must be sufficiently removed from formality to have some of the easy grace of nature about it. The bloom must be large and profusely produced, brilliant in colour, finely formed, and if scented, rich in odour. At the time the plant is shown, sufficient bloom to present a uniform head should be expanded, and it should have a rich, crisp, and glossy appearance. Cleanliness is a great point; consequently every leaf must be free from dirt of any kind, and not an insect must be seen. Plants thus appointed, whether they be hard or soft wooded, come from the tropics or be denizens of a milder climate, will always please; and it matters not whether they be large or small, they all alike show the skill of the gardener—so long as they are sufficiently large to show some mark of cultivation since they left the nurseryman's stores.



Fancy Pelargonium.



Chorozema cordata.

As, however, example is generally better than precept, we here portray two examples of good management—one a *Chorozema cordata* grown in the Royal Botanic Garden, Kew, and the other a *Fancy Pelargonium*, as shown by Mr. Robinson of Pimlico. These may be regarded as perfect specimens of their kinds, are symmetrical in form without being formal, and graceful in outline without being encumbered with numerous sticks. It must, however, be remembered, that a plant may be large and finely formed, and yet not meritorious in point of management, for it may be a plant of very easy cultivation; for instance, the *Chorozema*, though admirable in its way, would not bear comparison with a plant of *C. triangularis*, *angustifolia*, or *Henchmanni*, of the same or even smaller size, while a plant of *Burtonia conferta* or *violacea*, *Boronia serrulata* or *pinnata*, or *Gompholobium splendens*, not half the size, would be infinitely superior and more meritorious. Hence it is necessary that censors should be persons of experience, and practically acquainted with the management of the plants they undertake to adjudicate upon.

Plants also should harmonise in point of size, so that when grouped together they may look as if they came from the same place, and not as if they had fallen together by chance. We once saw a collection of splendid Heaths, averaging from 2 to 4 feet in size, lose the first prize through the gardener putting in a small but admirable plant of *Erica Sprengelii*; and only last year we saw *Cytisus racemosus*, 5 feet high, and *Hoya bella*,

about as many inches, shown in the same group. Such arrangements show bad taste, and ought to be publicly reprobated. It may, perhaps, so happen, that several collections of plants may be so nearly equal in point of merit as to render it difficult to say which is the best. In such a case it is the duty of the censors to examine the plants in each collection separately, both as to form and inflorescence, and then if they were equal, the difficulty of cultivation would decide the point, for if one collection contained plants of more difficult management, that of course must have the first prize.

Size, more especially when it arises from age, is not a leading quality, except in plants of very difficult management, and then the mere fact of keeping them alive and in exhibitable condition is very meritorious, for of course, plants which are very difficult to grow in a young state must require equal skill to keep them healthy when full grown, but plants which have grown large, and have afterwards been twisted and twined about to make them shapely, should not be exhibited at all; for though we cannot join in the cuckoo song which has been raised about growing plants without stakes, knowing it to be impossible, yet it must never be forgotten that they are a necessary nuisance, and never can be used too sparingly or too slight in character. In a few words the leading principles to be observed in plant-judging are—First, that the plants be clean, healthy, and finely formed; second, that they be profusely covered with bloom, the

individual flowers being finely formed, large, and finely coloured; third, that the plants be choice—novelty and tolerable size being always superior to age and large size. Thus, if ten plants were competing, one introduced ten years back and the other only two; and if each required the same skill in management, the new plant, if it had been well cultivated, would be the most meritorious, and should have the first prize. Thus far we have indicated our opinion of some of the rules which ought to be observed by plant-censors, and those who judge individual flowers cannot do better than take "Glenny's Properties" as their guide, for though some of his rules may appear arbitrary, they are in the main correct, and the best that have been published.—(A., in *Gardener's Magazine of Botany*.)

GARRYA ELLIPTICA.

Few plants, even under glass, are more beautiful than this hardy shrub has been the whole of the present winter. Planted against a wall, and only very slightly trained, its beautiful drooping trusses have been elongating since October, and at the present time many of them are upwards of a foot long, the individual florets composing them being fully expanded, and the whole in such abundance as in a great measure to cover the plant, which is at all times a beautiful evergreen. It blossoms and looks well every year, but I have never known it so fine as it is the present season; and to all having a low wall to cover I would by all means recommend this shrub as one of the most suitable; while even as an open standard, or, rather, low bush, it is equally at home.—J. R.

CONSTRUCTION OF CONSERVATORIES.

AMONGST the manifold subjects treated of in your Journal there is one which seems not to have received its meed of attention—"The construction of conservatories."

True, it frequently happens that this important matter is entrusted to some architect whose taste induces him to consider certain conventional architectural forms more than the welfare of plants: consequently an unsatisfactory state of growth follows.

In other cases where the well-being of plants has been considered, external and internal ornament has so swelled the cost that the building of the conservatory has been the cause of checking further improvement.

A few guiding principles as to what really constitutes elegance in glass structures would be of much service to many of the readers of this Journal, and I hope some one well versed in the subject will detail his views.

It would be wrong in me to endeavour to limit these remarks in any way; but one or two simple yet very important questions I should like to see discussed.

First, The relative merits of iron or wooden houses; and if the former are adopted, of what construction?

Secondly, What is the best kind of glass, and what sized sheets are most economical, taking appearance, economy, and efficiency into consideration?

Thirdly, Are domes hurtful or otherwise to plants, and what is the general feeling on their appearance?

Fourthly, What is the best substitute for shading?

Fifthly, Is top ventilation required in a conservatory; and if so, how is it best managed?

Some other useful desirable information may be added to the above, which the nature of the subject will easily point out, and I hope that some of your numerous correspondents will give us their opinion on the matter in all its bearings.—W. H. T.

[We join in this wish, and shall be obliged by the communication of drawings and descriptions of conservatories, whether small or large, that are proved to be handsome and successful as a dwelling for plants. If the cost of construction is added, such communications will be still more useful.—EDS. J. or H.]

PRUNING ROSES IN POTS.

"S., Hampton Court, has three pot Roses from cuttings taken in the early part of last summer, from 1 foot to 1½ high, a Général Jacqueminot, a Mrs. Bosanquet, and a Géant des Batailles. Two are in single stems, and the other has two, both apparently equally strong. Ought he to cut them all down to

the lowest eye, and entirely do away with one of the two shoots? He wishes to keep them as pot Roses, and to have them all next winter in a cool conservatory, so as to bloom earlier in spring than they would otherwise do if kept out all the winter.

[If you wish the plants to bloom this season, merely shorten the shoots about a fifth. If you would sacrifice this and grow them to be finer plants for the spring of 1864, then cut down to 6 inches in length, if you wish to make bushes of them, and if so, it matters not whether you have one stem or several. The one stem would look the handsomest.]

JUDGING GRAPES AND OTHER FRUITS.

As the season for horticultural exhibitions is again approaching, it reminds me of the revival of the discussion of rules for judging fruit, more particularly Grapes, and the desirability of having something like a recognised system, or set of rules for the guidance of the censors.

I have had considerable experience as a judge of horticultural productions at sundry provincial shows, but was never until lately aware that at the great metropolitan exhibitions the practice of testing the flavour of the fruit by the most direct and natural process of tasting was not allowed, or, at least, not practised; but that the flavour was merely assumed from the general appearance.

With all due deference and respect for such authorities as our great metropolitan societies, I will venture to question the consistency of this practice. And the question which immediately suggests itself is this: If the flavour of Grapes can be ascertained without tasting, then why cannot the same rule apply to Melons and other fruit? as with respect to Melons, at least, the practice appears to be always to cut and taste them; and as it must be admitted that Grapes as well as Melons are grown to be eaten. This being admitted to be the case, flavour must always be a paramount consideration (without at the same time ignoring in the least degree appearance, for fruit ought to be "good for food, and pleasant to the eye"), and flavour, I am inclined to think, can hardly be correctly ascertained without a direct appeal to the palate. Another consideration is this: a few berries can be abstracted from a dish of Grapes without necessarily preventing them from being exhibited on a subsequent occasion, or, at least, from being sent to table, whereas the same cannot, of course, be done with a Melon when it has been cut. And, with respect to the latter fruit, it is the constant practice to give the first prize to the best-flavoured fruit, quite irrespective of size or general appearance; and I doubt not many people conversant with the subject, have observed with something like regret, the first prize awarded to a fruit which had nothing but its flavour to recommend it, while larger and more handsome fruit, only slightly inferior with regard to flavour, had a subordinate prize assigned them, or remained unnoticed.

To obviate this, in some measure, a system of points or marks has been recommended, and the suggestion, I think, is worthy of consideration. There is nothing new in the matter, as florists' flowers and plants generally are necessarily judged on something like this principle, and with regard to fruit the system might, I think, be more clearly defined, and rendered more easy of application.

I hope that you or some of your able coadjutors and correspondents may be induced to give the subject consideration, and to bestow on your readers the benefit of the same, and in the meantime, if you will kindly allow me, I will offer a suggestion on the subject.

First. With respect to Grapes, I would confine myself to 11 points or marks, assigning them as follows:—3 points to the best flavoured; 2 to the best coloured; 2 to bloom; 2 to size or weight of bunch; 2 to size or weight of berry.

For Melons I would take 7 points—3 points to flavour; 2 to size or weight; 2 to general appearance.

I have said nothing of degrees of ripeness, as unripe or over-ripe fruit ought to be disqualified.—P. G.

PROTECTING YOUNG TREES FROM RABBITS.

IT HAPPENED to be in Waukegan about the time Rabbits bark young fruit trees, and as I did not know what to do to prevent them, I applied to Mr. Robert Douglas the extensive nurseryman, for a remedy and he told me to mix equal quantities of

lard and soot, and rub the trunks of the trees; but on consultation with a neighbour, who advised lard and sulphur, I concluded to mix all three together; so I mixed equal quantities of lard, sulphur, and soot, and applied it, and it proved effectual. On the trees that were partly barked, it stopped the rabbits from injuring any more, and the trees have completely recovered, and the wounds are healed over. The mixture dried on to the trees, and has protected them since.

The same winter my neighbour had a young orchard of sixty trees completely destroyed, and last winter another of my neighbours had about thirty trees destroyed by them, although he rubbed them with lard and soot; the rabbits eat grease, soot, bark, and all. They ran round in my orchard, and ate all the twigs they could reach, and barked one tree that was not coated with the above mixture; but they never touched a tree that had been rubbed within two years with the lard, sulphur, and soot, because the remains of it were still there.—(*Lower Canada Agriculturist*.)

FEATHERED HELPS IN A GARDEN.

I SEE by a communication from "H.," that he wants "practical enlightenment" on the use of fowls in a garden, and you also state that you will be glad to receive information. I shall be extremely happy to give you my experience, for the subject is mooted at a moment when some vent is required for the emotions which the bare thought of fowls creates in me. The facts are simply these:—I live in a retired neighbourhood, and my particular hobby is gardening. I have a neighbour two doors off whose particular hobby is love of fowls. These two otherwise commendable tastes come into violent collision twice or thrice a-day. The peculiar characteristic of my neighbour's fowls is, that they have an irresistible and unconquerable propensity for coming into my garden in preference to staying in their own. The result is, that I am driven wild every day; and as my wife and family participate in my alarms, the consequences, as you will perceive, are rather serious to well-disposed and peaceable people. I will not delay informing you as to how these lamentable events are caused; and, first, I will speak, as impartially as human nature can do under the circumstances, of the good which fowls do.

The least objectionable of all fowls, excepting small birds, of course, are the hens, and from this category I beg to observe that I rigidly exclude the cocks. Both of them are very fond of slugs, snails, *et hoc genus omne*, and in pursuit of these pests, do a trifling amount of good. The ducks are equally destructive to insects, and are even more persevering in the search of them; but put ducks, cocks, and hens together they will be no more a help to you than a quarter of an hour of personal labour would be.

Now, we come to the opposite side of the balance sheet. My pen fails to paint the agonies which their destructive habits have occasioned me. The cocks and hens knew perfectly well that they were trespassing, and were liable to be prosecuted; but notwithstanding this they would come into my garden several times every day, and the vigour, robustness, and rapidity with which they sent my Sweet Williams, Pinks, Carnations, &c., flying into the air whilst in search of prey, was absolutely sickening to witness. I had a heap of rubbish in an odd corner once, but they have made it "small by degrees, and beautifully less," at the expense of the neatness, order, and cleanliness of my garden walk. This was with scratching.

The ducks do not scratch, but they are still more destructive when they go among softwooded plants. I had a nice bed of Nasturtiums last year, but the ducks had waddled into it four or five times, in search of snails, and the glory soon departed from that feature of the garden. The effect of ducks in a Nasturtium-bed is indescribable. They stagger about like drunken men, and I fancy they like it so well that they must roll in it over and over. Then my Prince of Orange Calceolarias were shipwrecked and knocked to pieces, and the simple fact is this, that I must give up gardening, or my neighbour must give up the fowls. From all this it results that cocks, hens, and ducks do far more harm than good.—R. WELCH, *Bristol*.

HEATING GARDEN STRUCTURES.

I HAVE read with much interest Mr. Robson's papers on ventilating and heating horticultural buildings, and feel assured that many will thank him for giving his experience. I believe it

is a subject that ought to be thoroughly examined, and I would be glad to have the experience of others who have had to deal with particular methods of heating. I, for one, will add what little information I can. I have had nothing to do with Polmaise and several other modes of heating mentioned by the writer, and, therefore, wished, as very likely others in a similar position to myself have done, that he had said a little more relative to them; for although fallen into disuse on account of real or supposed defects, they are not without interest to such as desire to know all that has been done, as well as what may be done, in a matter of so much importance to horticulture.

I once had the management of a small greenhouse, heated by means of a common brick furnace, from which a flue passed under the pathway three-quarters of the length of the house. This was covered with square bricks. The flue then rose above the floor, and was continued back to the furnace, built of brick on edge; here it ascended inside the house, and passed to the chimney. I simply mention this because I think that if the first portion of the flue pass under the floor it may be slower in its effects, but the heat is never lost, and is given-off slowly and in a condition that is never likely to injure the plants; for although I have seen several flues partly carried under the floor I never knew a case of overheating where this was the plan adopted, and, more than this, it allows of two or more laps of flue being placed above the floor. The further from the fire the thinner may be the material of which the flue is constructed, so that pipes may be used with safety.

I am inclined to the opinion that where fire heat is necessary only to keep out frost, as in the greenhouse, there can be no reasonable objection to the flue system. That system has been objected to on account of an escape of smoke happening occasionally; but this must be owing to carelessness in the construction, or, what I have known to be the case, from neglecting to make a suitable provision for clearing-out the soot. When a flue is built bricks should be left out at suitable distances, to be inserted after the other part is finished: these can then be taken out without disturbing the adjoining brickwork. Where this provision is neglected a leaky flue is no uncommon occurrence; for where bricks are well put together it is almost an impossibility to take out one without disturbing several others, and these are generally left so that the smoke can escape through the cracks formed in the process. I have known such instances, and the blame has been thrown on the system; it is more for the want of taking notice of such minutiae than from any defect in the system itself that accidents have happened, even where a permanent heat is required, as in the forcing of Grapes. I have seen some of the very best Grapes that could be grown hanging in a vinery heated on the flue system.

But still there is no reason why hot water should not have its full share of credit; and what I have had to do with hot water has been satisfactory. But then it is one thing to heat 500 superficial feet of glass, and another thing to heat as many thousands. What may be thought economical in the former case may be thought the contrary in the latter. There must be proportions in every case; but this does not alter the fact, that what scientific men are aiming at and have tried to achieve is possible—that is, to give a large amount of heat with a small consumption of fuel. To do this it is necessary that all the heat generated should contribute to the object in view; but how this is to be done is the question. If you burn a pan of charcoal in a room the whole of the heat generated is disseminated throughout the enclosed space, provided there is no outlet for it; but this is not the case in the furnace, which must be provided with a chimney, up which much of the heat ascends with the smoke, escapes at the top, and is lost. This must inevitably be the case to a certain extent; for I do not see how the escape of a portion of the heat in this way is to be prevented, but that is no reason why some of it should not be saved; and sometimes this is effected by having a horizontal flue, in addition to the boiler and hot-water pipes; but unless a good draught can be secured this method does not answer. A boiler fire ought to draw well, or it soon becomes clogged with soot.

One of the best arrangements of the kind I have ever seen, is in the case of a lean-to conservatory I have, until lately, had to do with. In this case the whole of the fireplace and boiler is under the floor. Thus the heat of the fireplace itself ascends through the floor, and acts on the internal atmosphere of the house; it also adjoined a cistern of rain water, and warmed that. The chimney ascended inside the house, a portion of heat was, therefore, secured from that; then there were 120 feet of

four-inch piping, the boiler being of wrought-iron, and the fire heat playing well around it before ascending the chimney. With this arrangement it would be no difficult matter to keep the house of 50 feet by 16, at a temperature of 80°; but to do this it would be necessary to keep a fire going day and night, and this at the smallest consumption of fuel, tells up in the course of a few weeks. The boiler alluded to is a saddle one, of the best of its kind, and set in the most approved manner, and although I believe that the consumption of fuel was moderate, yet the space to be heated was very small compared to what is required of some boilers. There is a vast difference between heating 120 feet of four-inch pipes, and heating 2000 feet of the same-sized pipes, and if a boiler can be constructed on a plan that will heat the quantity of water contained in the 2000 feet of pipes, with the same consumption of fuel that was necessary in the above-mentioned case, a great stride will be made in the right direction.

I believe this is possible, and what I have seen of different kinds of pipe-boilers convinces me that they are most efficient, where a large body of water is to be heated. I do not pretend to say that one kind is better than another; whether Weeks', Ormson's, or Clarke's are most effective. The pipes of these being upright, or nearly so, they are, doubtless, less likely to clog with soot than Messenger's boilers, the tubes of which are arranged horizontally, and are triangular, and fitted so as to leave three quarters of an inch space between. They are made on the principle of presenting a maximum surface of water to the fire; and although this gives a large surface to clog with soot, and, moreover, these boilers require constant cleaning, still I believe they are the most efficient I know of, for heating a large space. But one thing is necessary—there ought to be a good draught, or the many intricate passages the flames have to pass through, damp the fire, causing a waste of fuel. In order to keep the fire going, much has to be raked out that would be otherwise consumed, and however strongly a fire may burn at times, it ought to be so arranged as to be under control, with damper and ash-pit door. Where this is the case, it is not only safer, as when extremely sharp frosts occur, but it is economical in all respects. It would be the reverse of economy to find that the frost had got in, merely because it was found impossible to maintain sufficient heat to keep it out. I firmly believe that hot water is the best, cleanest, and cheapest means of keeping up a permanent heat; but I believe there is still room for great improvement in its application. In fact, there should be no loss of heat from the boiler being placed too far from its work, or other causes, and it should be perfectly under control.—F. CHITTY.

SEEDS FROM BARBADOES.

I HAVE received from Barbadoes some seeds, of which I send a list as nearly as I can distinguish the names. Some are very large. Will you inform me whether they are available in this country? I possess a small stove and conservatory.—VICARIUS.

Abrus precatorius	Bread-and-Butter seed. Botanical
Anona muricata	name unknown
Achras sapota	Canna indica
Circassian berries.	Guilandina Bonduc.
unknown	Lent-blossom tree. Botanical name
Coix lachryma	unknown
Blue Ipomœa	Mimosa viva
Bixa orellana	Sapindus saponaria

[We do not think that you will do much with your importation of seeds from Barbadoes, either for your own growth or in the way of exchange for other plants. In fact, any gardener of experience would be shy of receiving tropical seeds as a gift unless gathered by a scientific practical botanist. To oblige you and some other friends who have had packets of seed sent them, which they value much more than practical men would be likely to do, we will give a few remarks on your list.

ABRUS PRECATORIUS.—This is a strong-growing climber, very abundant in Jamaica, where the roots are used as liquorice, and the seeds as beads. It would require stove heat, and half of a fair-sized roof to grow on, even if the roots were considerably confined. The seeds may be soaked in water at 150° for twenty-four hours before sowing.

ANONA MURICATA is the Sour Sop Custard Apple, which grows as a small tree in most of the West India islands, the fruit being a succulent subacid berry, like a large plum or orange in size, with a flavour and smell like our black currant. It would be worth while to try if this could be made to fruit in a dwarf state.

Sow the seeds in sandy loam in a strong moist heat, keeping the soil rather dry for a week.

ACHRAS SAPOTA, the Sapodilla tree, grows to a good height. The fruit is as large as a quince, with a thick russet skin outside, and a delicious melting flesh inside, with two small stones or seeds in the centre. These sown and raised, the only likely chance for making them fruit in a stove would be by cutting the young seedlings into cuttings, and thus trying to induce a dwarf habit, so as to fit them for our stoves of limited size.

CIRCASSIAN BERRIES.—Never heard of them.

COIX LACHRYMA.—We gave an account of this curious tropical Grass some time ago, and you will manage it very well in your stove. The pearly-like seeds have been called "Job's Tears."

BLUE IPOMœA.—These will require a good moist heat to raise them; and it would be advisable to keep them in rather small pots until you could see a flower. If you sowed them now, and raised several plants, you might try some of them against a south wall after the middle of June. There are so many blue Ipomœas that it is quite impossible to know whether yours are worth keeping until you have proved them.

BIXA ORELLANA.—This is naturally a high-growing tree, and, therefore, we fear you will not be able to manage it in moderate space. There is little attraction about it except its associations. From the pulp which covers the seeds the drug *annatto* is made, which, if not now much used for medical purposes, is, with or without our knowledge, partaken of as a colouring matter in a good deal of the cheese and the butter we use.

BREAD-AND-BUTTER SEEDS.—These we cannot find out by such a name. There are Butter-and-Eggs (the Narcissus incomparabilis), the Butter-bur (the Tussilago), the Butter-nut—a Walnut (*Juglans cinerea*), and there are the Buttercups, which we associate with daisies and the "long-times-ago." Again, there is the Bread-root, the *Psoralea esculenta* of Missouri, where the roots are used somewhat in the manner of potatoes. There is, again, the Bread-fruit, *Artocarpus incisa*, so plentiful and useful in the South Sea Islands, growing there to the size of an oak with us, and with foliage as finely cut, producing fruit as large as a good-sized Swedish turnip; and between the skin and the large core the white edible matter is placed, which is so supplied with starch that when a ripe fruit is roasted it eats very like and is as pleasant as the best wheaten bread. The seeds are generally about the size of a bean. Young plants are to be found in the best London nurseries, and the plants are elegant from their foliage; but we do not recollect seeing the fruit anywhere in this country.

The Bread-nut is the last to which we will refer. This is the *Brosimum alicastrum*, and most likely is what you have, as it grows freely in Jamaica and the West India islands as a slender tree or scrub shrub. It is often met with in our stoves, though there is nothing attractive in its flowers, which, in fact, may be said to have no petals. The mode of fruiting is a good deal like that of *Ricinus* or *Palma Christi*. The young leaves and the young shoots are eaten freely as fodder by cattle; but they are not wholesome as they get hard and full grown. There is a good quantity of milky starch and mucilage in the nut-like seeds which are used, boiled, before they are quite hard; and when ripe and roasted eat very much like a roasted chestnut. In sowing, the nuts may be steeped previously in hot water, or a little piece filed through at the end. If long kept they lose their vitality. If meant for a small stove the seedlings should be made into cuttings to induce a more dwarf compact habit.

CANNA INDICA, the beautiful Indian Shot.—Steep the seeds in water at 140° for twenty-four hours before sowing, and give them a good bottom heat, and keep the surface of the pot covered with damp moss before they appear. If kept in about 50° all the winter they will be good ornaments for the greenhouse in summer. Most seed lists now contain fine varieties of *Canna*. In the south of England they make a fine effect out of doors in summer with their bright flowers and fine foliage.

GUILANDINA BONDUC.—A large tree, chiefly found in the East Indies, producing fine foliage and branches of yellow flowers, and producing its seeds in a bean-like capsule. The seeds would germinate sooner from being steeped in water. We think a house like that at Kew or Chatsworth would be needed for this tree.

LENT-BLOSSOM TREE.—We have no idea what it is.

MIMOSA VIVA.—A pretty, slender, low-growing shrub, rarely rising 2 feet in height, resembling in appearance the Sensitive Plant, which you will find no difficulty in managing in your stove if you give plenty of heat and moisture.

SAPINDUS SAPONARIA is the tall-growing Soapberry tree.—The seed is a nut of a shining black colour, and from its hardness is often used for ornamental purposes. It is covered with pulp about the size of a cherry, and this pulp is used as a soap in many parts of America, though if not used carefully it is apt to destroy linen from its acidity as much as when it is whitened with the help of a little vitriol. Steep the seeds before sowing.

You will now perceive that the most of your seeds either belong to plants that are already common in large botanical collections, or from their luxuriance cannot be managed in small houses with advantage, or, if dwarf, can be obtained from our principal seedsmen. Yours, most likely, will have the advantage of being fresh. You can grow any or all of them as easily in the north as in the south of this country, if you can give them room enough and burn enough coal to give them a tropical climate.—R. FISH.]

ANOTHER MONSTER CALIFORNIA PEAR.

EVERY one doubtless remembers the excitement over the great California Pear produced a few years ago, in the orchard of E. L. Beard, Esq., at San Jose Mission; its weight was over 3 lbs. Rev. Dr. Bellows, President of the Sanitary Commission, has just received notice, *vid* overland mail, that another Pear, from the same tree, weighing an ounce more than the former one, was forwarded to him by the steamer leaving San Francisco Dec. 20, together with other interesting horticultural products.

That Pear has arrived in a tolerably good state of preservation, and is on exhibition at the office of the *American Agriculturist*, at 41, Park Row. The following is the letter to Dr. Bellows, enclosing the express invoice of the Pear.

"Custom House, San Francisco, Dec. 20, 1862.

"Dear Sir,—The other day E. L. Beard, Esq., handed me a mammoth Pear, grown in his orchard at San Jose Mission, California. Having for years been editor of the "Ohio Farmer," this immense Pear greatly interested me—first, on account of its size, and second, because it grew on the same tree that bore the Dr. Bushnell Pear, that created so much interest a few years since in the Eastern States. The Doctor's Pear weighed 3 lbs. and 6 ozs.—this one 3 lbs. and 7 ozs., so that it is the largest Pear ever grown in California.

"When I had sufficiently feasted my eyes on it, I concluded to send it to you, as the man of the east whose affections and gratitude had for the past two months been constantly turned to California.—T. BROWN."—(*American Agriculturist*.)

GARDEN TREES AND SHRUBS AT NEW YORK.

THERE is much more difficulty here to furnish a place with trees or shrubs, suitable for shelter or ornament, than in Great Britain; not altogether from the greater severity of the winter, as this is counteracted in a great measure by the wood, both of deciduous and evergreen plants, being much better ripened in the fall than it is possible for it to be in the British Isles, but rather from the constant alternate freezing and thawing that takes place in February and March injuring the cellular tissue of many plants that otherwise would be a great acquisition, and rendering such a thing as a shrubby unknown, as neither Bays nor Laurels will stand the winter, and Holly even under favourable circumstances merely exists.

It is a strange fact, which I leave for wiser heads than mine to elucidate, that a mild winter is most trying to evergreens, and a severe one to deciduous plants. In proof of this, last winter, which was considered a mild one for this climate, many hedges of American Arbor Vitæ in this vicinity were rendered quite unsightly for some time to come; and an *Abies Douglasii* here, nearly 20 feet high, the finest in this part of the States, was cut down to within a few feet of the ground; whereas clumps of *Hydrangea hortensis*, scattered about the lawn without any protection whatever, stood uninjured, and throughout the summer were loaded with large heads of blue flowers, with here and there a stray pink one to add to the general effect.

Araucaria imbricata lives but does not become ornamental. The same may be said of *Cryptomeria japonica*. *Pinus excelsa* stands well, but its leader seems to be attacked most pertinaciously by some insect, retarding its growth in height, but

throwing it into a very compact bush. Last spring I planted a *Wellingtonia gigantea* here that had stood two winters without protection, and so far it is doing well. The Irish Yew is quite hardy, but the common Yew is liable to be cut down. There are some fine, well-furnished trees here of the old Norway Spruce, which form a most agreeable protection in winter from our biting north-westerly gales, very prevalent at this season. This and the Silver Fir, Hemlock Spruce, and Weymouth Pine form our most generally used trees for shelter. *Taxodium distichum* makes a fine summer ornamental tree, and with its bright green foliage is quite refreshing to look at during the hot weather. *Magnolia conspicua* and *Soulangiana* both about 20 feet high and loaded with flowers from top to bottom in April and May, are a sight worth seeing. *Grandiflora* is generally protected, but stood here last winter without shelter, and flowered well throughout the summer. The Pampas Grass requires protection, but amply repays the care taken of it.

In the nursery of Messrs. Parsons & Co., Flushing, about five miles from here, are some fine specimens of hardy Coniferae, a list of some of which I append. Great attention is paid to this department by the enterprising foreman, Mr. Trompey, who is likewise the most scientific and successful propagator in this part of the States, making fine plants in a short time from grafts, and as he avers without any difficulty.

<i>Abies Menziesii</i>	<i>Picea Nordmanniana</i>	<i>Pinus pyrenaica</i>
<i>Kämpferii</i>	<i>Pinsapo</i>	<i>strobilus compacta</i>
<i>pyramidata</i>	<i>cephalonica</i>	<i>Taxus aurea</i>
<i>Whittmanniana</i>	<i>picta</i>	<i>stricta</i>
<i>Clanbrasilensis stricta</i>	<i>Parsonsiana</i>	<i>Thuja borealis</i>
<i>orientalis</i>	<i>nobilis</i>	<i>Cupressus Lawsoniana</i>
<i>elegans</i>	<i>grandis</i>	<i>Juniperus squamata</i>
<i>monstrosa</i>	<i>pectinata compacta</i>	<i>humilis</i>
<i>Gregoryana</i>	<i>Pinus monticola</i>	<i>hibernica compacta</i>
<i>pumila</i>	<i>Lambertiana</i>	<i>oblonga pendula</i>
<i>inverta</i>	<i>nivea</i>	<i>Cupressus spheroides</i>
<i>compacta</i>	<i>uncinata erecta</i>	<i>compacta</i>
<i>Cephalotaxus Fortunei</i>		

Many of the above are fine specimens, and all are in good health. I may here state, that a Pear from California has been exhibited for the past week, at the office of the "American Agriculturist," New York, weighing no less than 3 lbs. 7 ozs., evidently a monstrous *Duchesse d'Angoulême*, thoroughly looking its weight, and stated to be the largest Pear in the world. A very fine Flemish Beauty, 20 ozs. weight, 12½ inches in circumference, was grown in the garden of an amateur in the village here, last year, and both for form and colour a perfect model.—DAVID FOULIS, *Gardener to Edwin Hoyt, Esq., Astoria, Long Island, New York.*

ENTOMOLOGICAL SOCIETY'S MEETING.

THE anniversary Meeting of the Entomological Society on the 26th of January passed off in a more harmonious manner than was expected, although the Treasurer's accounts showed a smaller balance than in the preceding year, which was attributed to the fact that the Council had carried out their resolution to publish at once all the papers read at the Meetings of the Society, some of which were two years in arrear, and also to the expense necessarily incurred in making-up back volumes of the "Transactions" for sale. These legitimate expenses will not occur again; so that the Society, having still a considerable balance in the funds, may be regarded as being in a flourishing state.

The following gentlemen were elected Members of the Council for the ensuing year:—Messrs. Dunning, Grut, Sir J. B. Hearsey, McLachlan, Pascoe, W. W. Saunders, Shepherd, F. Smith, Stainton, Stevens, Waterhouse, Weir, and Prof. Westwood; and the following officers were appointed:—Mr. F. Smith, President; Mr. S. Stevens, Treasurer; Messrs. Shepherd and Dunning, Secretaries; and Mr. Ianson, Curator.

The President delivered an address to the Society, in which he especially dwelt upon the advisability of rendering the Society's collection of British insects as perfect as possible; a strong opinion has, however, manifestly grown up in the Society as to the impolicy of the Society possessing a collection, which necessitates the expense of a Curator, additional room, and, consequently, increased rent, &c.

Thanks were voted to the President for his speech, which was requested to be printed, and also to the officers and members of the Council for their services during the past year.

THE general Meeting of the Society for February was held on the 2nd instant, with the President in the chair. Donations of

the publications of the Natural History and Entomological Societies of Moscow, Munich, the Netherlands, and Canada, with various other works, were announced. Certificates in favour of Dr. John Leconte, of New York, and Messrs. Lacordaire and Hagen as foreign honorary members of the Society, were read. The President nominated Messrs. Pascoe, Waterhouse, and Grut to be the Vice-Presidents for the ensuing year.

The Secretary exhibited a small box of "manna" collected in Tasmania, being an exudation from the young branches of the White Gum trees caused by the punctures of a species of *Eurymela*, a genus of Hemiptera, allied to our common Cuckoo-spit insect or Frog-hopper, and which infests the trees in the same manner as our Rose Aphides. The exudation rapidly hardens, and dries into a white saccharine mass, and is collected and eaten.

Mr. Frederick Bond exhibited two remarkable moustrosities occurring in *Colias hyale*, the pale-clouded yellow Butterfly, one of the fore wings of which was not more than half the size of the opposite wing; and a female of *Lycana Adonis*, in which the right-hand hind wing on the under side was deficient of many of the ordinary markings, and the fore wing on the same side had only two dots.

Mr. Waterhouse read a communication on *Homalota soror*, and several allied species of minute British Rove Beetles.

Mr. Haward exhibited a collection of Coleoptera collected by himself in central Europe, containing many very fine and rare species.

Mr. Stainton, on behalf of Mr. Healy, exhibited some Bramble leaves, within the burrows of which were visible the cast skins of the larvæ of a species of *Nepticula*. He also read some notes on the peculiarities observable in the moulting of the caterpillars in this group of little Moths, by which it appeared that, although the larva state in the summer time lasted only a few days, in the middle of January it required four days to enable the larva to complete its moult.

Mr. McLachlan read a paper on *Anisocentropus*, a new genus of North American Trichoptera (Caddice Flies), with descriptions of five species; and also on a new species of the genus *Dipseudops* belonging to the same order of insects.

Professor Westwood exhibited drawings of the species of *Lucanidæ*, collected in Gipps' Land at the south-eastern extremity of New South Wales, forwarded by Dr. Howitt.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE preparation of the various quarters designed for main crops to be persevered in whenever the soil is dry enough to admit of being trodden on without being too much consolidated. This is of great importance on heavy stiff soils, and those who have such to deal with should take advantage of every dry day that occurs. On such soils, too, it will be advisable to defer sowing main crops for a week or even a fortnight. But on light dry soils the sooner the main crops are put in the better, because such soils are most liable to suffer from drought should it occur; and, therefore, the sooner the crops become well established the more likely will they be to resist its effects; if, on the contrary, the season should be a wet one, they will also be in the best possible condition to profit by it. *Beans*, plant out *Mazagans* from boxes and pots. Sow Longpods, regulating the quantity by the demand. *Cabbage*, sow another patch of any early sort, and a few Red for winter use; also, the true Drum-head Savoy. *Cauliflower*, prick out the young seedling plants either on a warm border or a gentle hotbed, to be sheltered in unfavourable weather with hoops and mats. *Celery*, the first sowing to be pricked-out as soon as it can be well handled, and another sowing made of both Red and White. *Leeks*, sow for a principal crop. *Lettuce*, prick-out the young seedling plants, to be treated as advised for Cauliflowers. *Onions*, the principal crops should now be sown. The Deptford, Old Brown Globe, James' Keeping, and White and Brown Spanish are good sorts. Sow them in beds of 4 feet wide, and in drills 9 inches apart, and if you can obtain it, sow some charred refuse along the drills before covering-in. When the beds are raked smoothly over and the surface is a little dry, pass a wooden roller over them several times, as Onions succeed best when the soil is well consolidated. *Parsley* sow a good breadth of the best Curled. *Peas*, on light soils lose no time in getting-in the main crops of summer sorts, together with a few of the later kinds. *Potatoes*, plant both early and late varieties. Those who plant early generally suc-

ceed best. Whole tubers of middling size are preferable to cut sets. Persevere in hoeing, forking, and other surface-stirring amongst all advancing crops.

FLOWER GARDEN.

The digging of flower-borders must now be commenced in good earnest, in performing which use the fork in preference to the spade. All kinds of herbaceous plants may now be planted, either to fill-up empty spaces or to make new plantations in borders which have undergone a course of preparation this season. Pay particular attention to the arrangement of these as regards height, colour, and succession of flowers. Bear in mind that a large profusion of bloom alone does not make a flower-border beautiful and attractive, unless the plants are disposed in such a manner that harmony of colouring may prevail throughout the whole. Proceed with the planting of hardy Roses. Continue the pruning and nailing of climbers; also, the arranging and tying of such as are against trellises, verandahs, &c. Those walks which have become dirty on the surface or are overrun with moss should be turned, which will give a fresh and clean appearance to the surface. Look over autumn-planted beds of Carnations, Pinks, and Pansies, and press down firmly those plants which have been partially raised out of the ground by the late frost. Stir the surface of Tulip and Hyacinth beds where they are aboveground. Look to the sowing of annuals.

FRUIT GARDEN.

Pruning should now be quite finished in every department, and whatever nailing was left undone must be finished immediately. See that newly-planted fruit trees are properly staked and mulched; and after high winds it is necessary to look round them, and to press the earth gently round the base of the stems. All danger of very severe frost being over, Figs may have the coverings completely removed, and be neatly pruned and nailed; do not crowd them with wood.

FORCING-PIT.

Continue to introduce plants of Hydrangeas, Roses in varieties, Pinks, Carnations, Rhododendrons, Kalmias, Heliotropes, and Azaleas. Shake-out a batch of last year's Fuchsias, Erythras, and *Salvia patens*, and place them in bottom heat. Sow Balsams, Cockscombs, Globe Amaranths, &c.

GREENHOUSE AND CONSERVATORY.

Stop any strong-growing shoots of Camellias that are taking the lead when their blooming season is over. Commence syringing freely on every fine morning such Heaths as are freely making their growth, and those that have lately finished blooming. Examine the soil of such plants as the different kinds of *Acacia*, *Genista*, *Cytisus*, *Nerium*, *Eutaxia*, *Myrtles*, the varieties of *Cactus*, and others that may have been resting in the greenhouse for a time, to see if the drainage is all right, and that no plant is suffering for want of water. Many an old corner requires routing-out, and the plants brought forth to receive proper attention.

PITS AND FRAMES.

Those who have not yet attended to the propagation of plants for bedding-out must now begin with all possible speed to put in cuttings of *Verbenas*, *Petunias*, *Fuchsias*, *Heliotropes*, *Lobelias*, &c., so as to have good plants for bedding-out in May. Pay due attention to watering, and topping-back weak and straggling shoots, so as to form robust bushy plants. If any slugs or snails have snug quarters here they will do much mischief if they are not looked after sharply, and destroyed as speedily as possible.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WE seemed to be rejoicing overmuch over the few days' sun, as again we have had a week of a leaden sky, with scarcely a peep of sunlight to cheer us, though good for carrying on work out of doors requiring muscular energy. Stirred the soil among crops; sowed succession Peas and Beans, in the open air, covering them with burnt refuse to keep off slugs and mice, throwing also a little barley awns along the rows for both purposes, as it pricks the sleek sides of the former, and sticks in the beard of the latter. The greatest trouble at this season is with grass mice, and they are caught with most difficulty, as they will take little except what is green. Some boys are good at catching them with hair and small wire-trap nooses placed in their runs, much in the same way as poachers manage hares and pheasants. They saved us some time ago the trouble of nipping over some Cal-

ceolarias, and they nip over so much more than they eat, that it seems as if they felt a pleasure in the mischief. Ah, well! we would be apt to become careless if we had everything our own way, and had no battles to fight.

Planted out Cucumbers in a small pit which is heated by hot water, as in this sunless weather we cannot obtain heat enough in a frame as yet, as we have little but leaves to depend on for the heat, and must use even them with economy. We gave a section of this pit some time ago, 6 feet wide inside, sunk narrow path at back, and narrow pit in front, two three-inch pipes below, and two in front above, but separated from the bed by a narrow brick wall. The only alteration this year is forming simple ventilators in front, just opposite the lowest of these top-heat pipes, and if a simpler plan can be devised, we should like to hear of it. The ventilator is formed by knocking out a heading brick in the front wall, below the centre of each light, leaving the sides smooth, and having plugs or wooden bricks the size of the opening, but the plugs made in a wedge-shape, so that by merely moving them a little you can admit a little fresh air, which gets heated by coming against the pipes and the inside walls before rising through the general atmosphere. A little of this air from these plugs will be left on almost constantly, except in very severe weather, and thus not only cause the air in the house to circulate but freshen it as well. Some of our friends who advocate Polmaise heating, contend that it is the only plan by which the air in a confined atmosphere can be made to circulate. But that is all a fallacy. In a house heated by whatever means, the air is constantly in motion, even when all the ventilators are shut. We have proved this over and over again, with light down and bits of feathers. No doubt Polmaise, or the drain system connected with it, adds greatly to the force of the circulation. In this pit there are cross drains from the pathway communicating with the space shut in for the top-heat pipes, and when a strong heat is used the draught at these open drains will pretty well extinguish a candle, when all external air is as much as possible kept out.

Removed Kidney Beans bearing from Vine-pit, as it was so crowded we could not move about in it, placed them in another pit in a bed of hot leaves, and planted successions in pots in the same place, preferring pots just now in order to move them easily afterwards. Turned over ground intended for Onions and Parsnips. Planted Shallots and winter Onions. Sowed Radishes and Lettuces where they could have a little protection, and prepared for sowing Parsley. Placed some hand-lights and boxes over Rhubarb out of doors to bring it on a little.

FRUIT GARDEN.

Proceeded with pruning and nailing as opportunity offered; Looked after insects in Peach-house; potted Melon plants, having as yet no place to turn them out in, and stinting when young does them no good; looked over Strawberries on shelves, in every possible position, and if a few seemed likely to do little good removed them at once. This is what few young men will do, they will water and water a pot, whether it is worth the watering or not. In this dull weather water in saucers is very prejudicial; but we said enough on this subject lately. The few plants taken out as not showing well, will be useful in autumn. At present they are turned out of their pots against the north side of a fence, packed closely together, and a little rough leaf mould placed among them, and when we have time we will plant them out, and, most likely, obtain a good gathering from them in September and October.

Some Vines in pots, rather small, have been set inside of other pots of rather larger size, and the latter half filled with rough loam, and have been set in the early vinery, as they will come on before those on the rafters. These, though not extra fine, have shown better than we expected at this early season, as they received no preparation for early forcing, and were merely grown last year in an open, cool, orchard-house. If left to break in that house we have no doubt the shows, which are very fair, would have been better. These are the plants mentioned some time ago as being set in a small frame, with a little bottom heat, and a ridge of horse-droppings all round, to give them a steaming. These, forced with so little preparation, convince us of what some of our readers seem to be in doubt, that fine autumn Grapes may be obtained from an orchard-house, without any artificial heat whatever, whether the Grapes be trained under the roof, or as pillars, or as bushes, or in the raspberry style, provided they have plenty of light. Of course, the brighter the summer and the autumn, the better will the

wood be ripened. If planted out as bushes of different heights, it would be well to have each plant in a pit or box of its own, so that changes could be made without interfering with the general planting. Have just placed some small pots of cut-down plants on the floor of a Peach-house, which we intended to treat in that way; but—

"The best-laid schemes of mice and men,
Gang aft a-glee."

The house in which they were to be grown is at present a vision of the future. In all such hardy vineries, however, a simple mode of heating would be an advantage, as then the Grapes could be kept much longer in good condition, from the damps of autumn being dispelled. Thoroughly washed, cleansed, and limewashed the walls of late vineries, brought the Vines to the front of the house, and then filled it with bedding plants above and below.

ORNAMENTAL DEPARTMENT.

The rough leaf mould laid on the ridged-up flower-beds was not only well sweetened, but the birds and winds were sweeping it over the lawn. Had it swept, the leaves turned-in by a shallow spit, and the lawn well rolled and walked rough-swept, and then rolled when dry. When too close and level at this season, places at all in the shade are apt to become green. There is a great expense in nice gravel walks; but, after all, nothing seems so pleasant for continuous walking exercise. Planted out Anemones, Ranunculuses, Wallflowers, Sweet Williams, &c. Commenced pruning Roses, cutting Laurels, &c. Planted also some edgings of Cerastiums, just dibbling little bits as cuttings about 4 inches apart. If all goes well, they will root in a month or six weeks, and give little trouble. We planted a bed of this and Variegated Alyssum in the autumn of 1861, and found them useful; but this season we were not able to do it. We believe, however, that planting now will answer as well, and with less trouble.

CONSERVATORY.

This averages from 40° to 45° at night now, with a rise from sunshine when we can get it. Gave more water to Camellias, Azaleas, Cinerarias, Primulas, &c. Epacris done flowering should be pruned back and in a few days taken to where there is more heat, taking care not to cut into the old wood. Bulbs and forced shrubs should have a close warm place at first, and if brought from a hotbed in which the pots are plunged, the pots should stand on the surface of the bed, and have more air a few days before moving. Hyacinths and Tulips opening will relish a little artificial manure. The artificial ones sold at the office are very useful for amateurs in small places, as they save much trouble in messing and making up mixtures for themselves. In no case, however, should the quantity exceed the printed directions. It will be safer to give the stimulus a little weaker, and repeat the dose oftener, and to vary the manure at times. Guano must be used for pot plants with great care, as when thoroughly good it is a most powerful stimulant. The superphosphate is one of the safest, either mixed with water or a little dusted on the surface of a pot, to be washed-in by repeated waterings. Shifted the earliest Pelargoniums into their flowering pots, and will use a wet day for training and tying-out a little. Placed the plants in the second vinery, just showing signs of moving, that the Geraniums may be a little closer and warmer than they would be in the greenhouse. Stopped the stronger shoots of those intended for late blooming. Potted-off some to come in late that were struck late in autumn. Potted also some Pink and Scarlet varieties to bloom in pots. Pruned more Fuchsias, and set them in second vinery on the floor. The first lot are now breaking, and when a little more advanced will get rid of a good deal of the old soil and repot in fresh. Potted-off lots of variegated Geraniums, moved a good lot of the first, potted into moveable boxes so as to leave small pots at liberty, as, though the common Scarlets do well put out into beds, to be protected before planting-out time, the variegated ones do best when they have a little ball beforehand.

Proceeded as opportunity offered with taking off cuttings, and hardening-off those already struck, that the fresh ones may go into a hot place. Note here the great difference in striking in spring and autumn. In the latter season all half-hardy plants do best when plenty of time is given to them, and little or no artificial heat used. In the spring, the plants being on the move, will stand, nay, rather delight in an extra stimulus of heat, and, therefore, cuttings of many things may now be made into plants in as many days as weeks would be required in the autumn.

Last season, though it was next to impossible for Calceolarias to do better, we felt the want at planting time of small plants for edgings. To secure them this season, we have just prepared for taking off a good batch of cuttings, which will also make the plants more stubby. For this purpose, beds with hot leaves were prepared much as described the other week for Verbenas. A few inches of rotten dung and leaf mould were thrown over, and a little lime being added to sweeten it, it was trodden firm. Then about 3 inches of compost were thrown over it, and also firmed, and then dusted over with sand. The compost consisted of one part fine sifted leaf mould, one part burned earth and charred rubbish, one part drift sand, and three parts fresh loam, rather adhesive than sandy, put on in a state dry rather than wet. In a few days we will dib the cuttings in, much the same as described for autumn work, only we will keep the glass close and syringe the tops oftener, in the middle of sunny days. The cuttings being from 15 to 18 inches from the glass, will rarely require shading. Among the autumn-struck Calceolarias are some *Aurea floribunda*, rather yellowish and sickly. On examination we found that the cuttings had been planted quite deep enough, and the soil used had been old instead of fresh.—R. F.

TO CORRESPONDENTS.

CERASTIUM TOMENTOSUM CULTURE (*A Constant Subscriber*).—Old plants left in the ground may be dug up, and the soil they have been growing in exchanged for fresh; then the plants, being divided, may be planted somewhat like Box-edging, taking care, however, that sufficient of the couch-like roots be buried to keep the top alive. We find this the easiest way of managing it. Cuttings do as well if taken off beforehand, and struck in heat; but this mode of propagating is more troublesome.

ALYSSUM VARIEGATUM FOR EDGING (*Idem*).—It would not be advisable to have older plants than those struck last autumn. These, with others struck in early spring, are what we use; and we have not found any difference between the two when they are rooted about alike. Old plants might, perhaps, do; but they are bulky to keep through the winter, and are not so handy as young ones.

APPLYING LIQUID MANURE TO A POOR GARDEN (*Aston*).—If your soil be light, liquid manure of any kind may be used almost at any time. Let it be well diluted and clear in dry weather, but on a rainy day you might put it on stronger. Very stiff ground, however, is not benefited by this, but lime will do it good. If liquid manure be inconvenient you might try guano, being sure that it is genuine. A very little of this is sufficient, and it can be used at any time without the disagreeable smell of liquid manure. The inexperienced amateur should be careful to use exceedingly little until he has found out how much should be given.

PRUNING FILBERTS (*H. C.*).—Those not versed in the matter can tell by certain appearances where the female blossoms are, they being small tufts of a bright rose colour. The male blossoms are produced more abundantly, and there is seldom any danger of cutting all of them away. Usually these show themselves early in the autumn, and a succession of them continues up to the time the female blossom is out and gone. Little regard is therefore paid to these at pruning time, but the small tiny buds showing the least bit of red are carefully preserved. They are generally at the base of small shoots, and in Kent are at the present time (Feb. 24), fully open; the trees were all pruned some time ago. This subject will be adverted to again by a writer from the Filbert district, who has promised us notes of his experience.

SOWING PINUS SEEDS (*J. W. W.*).—If your seeds be attached to the cone they are best separated by forcing an iron spike like the prong of a hay-fork up the centre of the cone's stalk, and so dividing them without mutilating them. This is especially advised for the large kinds. Sow in well-drained pans or boxes in a rather sandy soil, covering very slightly, or, in fact, scarcely at all. Some of the larger seeds may be secured to their place by fixing the wing part of the seed in the ground, and the germ only half covered. Some shading from bright sun will be necessary. A cold pit or house will do for them, but some of them germinate more quickly in heat. We do not advise a hot-water soaking which, though it removes the coating of resin or gum, we think injures the embryo. Good seed ought to vegetate without this unnatural process.

SHOOT OF ORANGE TREES DYING (*W. C. H. H. D.*).—It is impossible to judge from the sprig you have sent what is the cause of your trees going off so suddenly. There seemed a little brown scale, but that was nothing particular. Has any poisonous substance found its way to the roots, such as an escape of gas? Has salt water or any poisonous matter been in any water-pots or buckets used in watering them? Orange trees at times become diseased, but they become so gradually; while you say yours were healthy and looked well only a few days ago. There must be something more the matter than we can account for without being on the spot. The roots, we think, from some cause will be found to be defective. Is the drainage sufficient?

SEEDLING CINERARIAS (*Ogston Hall*).—That with dark centre, white-based and mauve-edged rays is a first-class flower. The other is only fit for the garden borders.

STEPHANOTIS FLORIBUNDA (*Stephanotis*).—The Number containing culture of *Lisianthus Russellianus* can be obtained at our office. You have no chance of the *Stephanotis* flowering in the summer of this year if you cut it down now. If you train the four-feet shoot round some sticks, and the shoot has well ripened, you may have a chance of some bloom this year. The best treatment would be to encourage growth without any cutting, and cultivate for flowering in 1864. The *Amaryllis* seeds, sown now, will bloom in two, three, or more years according to the kinds.

FLOWER-GARDEN PLANTING (*H. H. B.*).—We like both your arrangements, but prefer B, but would improve 2 with a margin of pink. We think your centre bed is too large for the rest of the group, but a broad band of *Perilla* will render that excess less apparent. The *Perilla* will require much pruning to keep it below *Bijou*.

FLOWER-POTS BECOMING GREEN (*Kate*).—You may, when they are clean and dry, paint them with whatever colour you admire most. If you used stone-colour paint, and before it was dry daubed it over with silver sand, your pots would look as if made of stone; and thus painted the green will be kept off for a long time. If the paint is well dried before the pots are used no injury will be done to the plants, if the soil is rather open and good drainage secured. If, like Grant Thorburn, you paint the pots green, the green mucus will never be seen even if it come.

POMEGRANATES NOT BLOOMING (*G. F.*).—Your Pomegranate had better stand out of doors after June or in the middle of May. Give it all the sun and air possible; and in pruning manage so as to have abundance of slender twigs, and do not stop or cut them, as they will produce the flowers. If you do not have bloom this season you may have it next. There was an account of the management a few weeks ago.

MILDEW ON GREENHOUSE ROSES (*H. N.*).—The causes are chiefly their being tender and our climate moist. The remedy is giving plenty of air, and dried a little in winter and spring if the roses are started early; and dusting with flowers of sulphur if the mildew does appear notwithstanding that treatment.

PROPAGATING LICOPODIUM DENTICULATUM (*Mary*).—Divide the moss into the smallest pieces with or without roots, and plant in sandy heath mould and a little loam. Keep damp, syringe in sunny weather, and shade a little until well established. You may as well cut over the brown fronds of the Maiden-hair Fern, and give it a warmer position, and fresh fronds will come all right. In your heat the Fern will be brown in winter.

HOYA CARNOSA CULTURE (*Idem*).—It should not be so dry as to wither the leaves. If they are merely a little limp it will be all right enough. A little more heat will also do it good, and before deluging the roots much you may syringe the leaves a number of times in a day, so that they may absorb moisture. In watering make a few holes in the soil, and fill them now and then for several weeks before deluging the soil. Except when in a high temperature in summer and in bloom, this thick-leaved plant needs no great amount of water. The heat should average 45° in winter, and seldom or never be below 40°.

GLAZING FRAMES (*Z. A.*).—If your frames are at all flat, you cannot do better than glaze in the common way, and use quarter of inch laps, and place the glass one way in order that the laps may be as close as possible. If the sashes were to be little moved, the squares finely cut and placed end to end would do, and there would be no drip, but then you would have a good deal of trouble if a square were broken to fit it as nicely again. The same remark applies to fitting-in glass in grooves in the sash-bars, and very little putty is needed; but there is great trouble in mending so as to clean out the groove.

FOREIGN HORTICULTURAL PAPERS (*Gillaume*).—We believe the "Revue Horticole" is the most widely circulating horticultural journal in France. We do not know anything about the Russian journals.

ADDRESS (*Constant Reader*).—Messrs. Carson's address is 9, Great Winchester Street, Old Broad Street, London, E.C.

GERMAN SAUSAGES (*Olivia*).—*Wurst krant* means sausage herbs, such being Sage, Thyme, Marjoram, &c. No particular herb is known by that name so far as we are aware.

CUBA BAST (*P. Q.*).—It is made of the inner bark of *Paritium elatum*, a species hardly separable from the genus *Hibiscus*. It is a native of Jamaica and other tropical islands. The strips of inner bark are there made into cordage. From another species, *P. tilaceum*, native of Otaheite and elsewhere, a fine matting is made of the bark films. The last edition of the "Cottage Gardeners' Dictionary" is dated 1857. It may be had free by post from our office for 5s. 8d.

NAMES OF PLANTS, &c. (*D. D.*).—1, Evergreen Oak; 2, *Escallonia rubra*; 3, Winter Codlin Apple. (*E. F.*).—The Fern appears to be an *Hypolepis*, but is immature. (*Old Subscriber*).—1, *Monochaetum ensiferum*; 2, *Blechnum spicant*; 3, *Taxus adpressus*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

WHICH SHOULD BE ESSENTIAL POINTS IN POULTRY?

WHILST reading week after week the able writing in your Journal, I have noticed one constant succession of complaints against the awards of prizes at our different shows, and also an endless discussion on the varied points that constitute a really first-class pure bred bird.

I hear individuals speak of a fixed standard; of poultry clubs which are to rule all exhibitions throughout the kingdom, and fix decisions for a never-satisfied crowd of poultry-breeders. Now, the bane of our shows is, that we are not content with the higher and real points that are the marks of prize birds, but we descend to particulars which I think are beneath any common-sense individual to support for a moment.

Why are we to set aside Aylesbury Ducks because their bills have a tinge of yellow? Why withhold the prize when Dorkings have only four toes? Or, why, in that noblest breed of birds, the Game, to bow to the caprice of a judge who may think that they should have different-coloured legs to what they possess?

I take these simply as instances, and I know from experience that numbers of birds of the purest strains in England possess

these so-called failings. Nay, I dare all poultry-breeders of however great standing, to deny that they have not bred as fine poultry in size, shape, and plumage, from their purest fowls, which they have been obliged to set aside on account, it may be, of a bill, or a leg, or a toe, or some hidden feather not being exactly up to the fastidious and overdrawn taste of a judge.

Let us look at another phase of this question. Can we fail to observe the number of fraudulent tricks now played at our shows, which would not exist but for this overstrained taste? Have we never read of the painting of legs, of the addition of toes, or the dyeing of feather, or of countless other methods of cheating which I might mention?

Now, if we really wish our shows to progress—if we wish the encouragement of poultry for their domestic uses—we must lay aside all these gross absurdities, and let each breed stand upon its well-known merits of shape, plumage, weight, or size.

We can never expect that farmers, or labourers, or the poor in general, will ever take up the breeding of poultry as a general trade, unless we break down those barriers, and render the keeping of true-bred fowls more profitable.

I call upon all men who are interested in this branch of industry, who feel these evils (and I know there are many such), now to raise their voices in one united and overwhelming cry for the reformation of such a system.

But, I am far from taking a desponding view of the future; the day is not very far distant when our judging shall no longer be a laughing-stock and a byword to the public in general; but when the breeding of poultry may take its stand among the many well-regulated and profitable trades which now exist.—
A POULTRY BREEDER AND FANCIER.

[Different people will of necessity have different opinions, and different standards of merit in every pursuit: hence it has been necessary to lay down certain rules, and they have been admitted for some years. One great end they answer is to form well-defined marks which may guide the inquirer and the beginner. The use of poultry shows has been to publish the merits and properties of divers breeds; to point out those that are fitted for certain soils and certain markets. Whether the demand be for eggs or for food, the knowledge now acquired and disseminated will enable the purchaser to possess himself of that breed which will answer his purpose. The characteristics of it being pointed out, he cannot easily be deceived.

Thus, he will not buy a Dorking without five claws; but if he is to be told that Dorkings with four are as good as those with five claws, he has nothing to guide or protect him; he is at the mercy of any one who has fowls for sale. There is no substitute for a real Dorking.

Take the Aylesbury Duck. If the buyer is told the bird must have a pale bill, he will not buy one lacking that mark; but if any bill will do, every white Duck to the uninitiated becomes an Aylesbury.

These are but two instances; we might multiply them, but we should not gain by doing so. We ask if there is any good quality given up in order to attain to the standard of excellence as regards points? Have Dorkings lost size? Have they suffered in constitution? Have Ducks dwindled in weight, or have they lost appearance? Spite of all the requirements of the most fastidious judges, you will not find at a good show (take Birmingham for instance), out of the two or three hundred competing pens, a dozen that lack any of the properties insisted upon, while the increase of weight has been *two pounds* per head. The difference in health is proved by the fact, that whereas formerly the class was the dread of managers, and after two days empty pens bearing tickets informing the public the birds were removed on account of disease were one in ten, now such a thing is never seen. Formerly it was thought they could only be reared on the sunny side of a Surrey hill, and that they required a peculiar soil. Now they thrive in Yorkshire, Lancashire, and even in the far north of Scotland.

The average weight of Aylesbury Ducks twenty years ago, was from 3 lbs. to 4 lbs., now it is from 4 lbs. to 6 lbs. Here, again, there has been no sacrifice of any useful quality whatever.

To continue the subject, let us take Pencilled Hamburgs. Roup was thought to be their natural state. People avoided the breed in their yards because they feared taint, and the classes in an exhibition, because suffering birds were not a pleasing sight. There was no inducement to take pains with them, till competition and requirements supplied the spur. Within two years they were shown perfect in colour, shape, and markings, and strong enough to bear any trial in the way of climate or

exhibition. And these were not temporary improvements. Although those who worked the transformation have given up the breed, or gone into other pursuits, it remains the same, and has no more roup than any other.

As a rule, judges are not over-fastidious; but it can never be that hundreds of exhibitors will be satisfied with the decisions of two or three men, or that the knowledge that deals with every class will be admitted cheerfully by those who have concentrated their attention on one. It is doubtful whether there is not more unanimity among judges than exhibitors. Among the latter those points are most insisted upon that are prominent in their own birds, because their owners strive for their own notions of perfection.

If it is granted that after every large show papers contain complaints of the awards, the thing admits of easy explanation. There are often from one to three hundred exhibitors. The majority are unsuccessful. They fancy, or a mischievous friend instils into their minds, that they should have had a prize. Many who would not care to condemn an award openly, will ask why they did not win, or will say they preferred one of the unnoticed pens to either of the prizetakers', under the signature of "INDEX," or "B.," or "Z." Like the man staring at the lion on Northumberland House, to see if he *did* move his tail, the example finds imitators, and a dozen who never thought of it before are moved by a spirit of fun to do the same.

We cannot so easily dispose of the charge of dishonesty and unfairness. We are afraid they are met with in every pursuit, and we fear they always will be. Neither points nor prizes have anything to do with it, and it is as common at chuck-halfpenny as at screaming hazard.

We think the mistake made is in confounding two distinct pursuits—breeding for exhibition, and for sale as food. There is nothing in common between them. The prizetaker sells many fowls. They are all bought either to exhibit or to breed exhibition fowls. Hardly any one who walks round a poultry show look at the birds as articles of food. Calculation, if there be calculation, is about the number of eggs to be sold for sitting, and of the chickens that are brothers and sisters to, or the produce of, the prize birds at the show. They are never bought to improve the quality of market poultry; they are bought for home consumption sometimes.

The farmer will not, the labourer cannot, or is not allowed to keep poultry. The former is above it; the latter has not space. His fowls trespass, or it is thought to be a temptation to him to steal a pocketful of the corn with which he is surrounded when at work, and his master forbids him to keep any.

We see nothing to laugh at in the judgment of those who are acknowledged to be competent, and who are above suspicion. Where the appointment belongs to the person who will perform the office least expensively, it cannot be expected that efficient and superior men will accept it.

The overthrow of shows would diminish the quantity of poultry bred one-half. To relinquish points of excellence is to extinguish poultry shows. There would be nothing to breed and to show for.]

WHITEHAVEN CANARY, POULTRY, AND PIGEON SHOW.

WE shall give our report of this Show next week. The following is the list of awards:—

CANARIES, Yellow Belgian.—First and Second, W. Lyon, Whitehaven. CANARIES, Buff Belgian.—First and Second, W. Lyon, Whitehaven. MULES, Yellow.—First and Second, R. Bell, Whitehaven. MULES, Buff.—First and Second, R. Bell, Whitehaven. PIEDALD CANARIES, Yellow or Buff.—First, R. Bell, Whitehaven. Second, C. Fitzsimmons, Whitehaven. LIZARDS, Gold or Silver-spangled.—First, W. S. Penny, Middlesbrough-Tees. Second, J. Walker, Whitehaven.

POULTRY.

GAME, Black-breasted and other Reds.—First, J. Brough, Carlisle. Second, H. Beldon, Bradford. Highly Commended, C. W. Brierley, Rochdale. Commended, J. Bywell, Whitehaven; J. Gelderd, Kendal. GAME, Duckwings and other Greys and Blues.—First, C. W. Brierley, Rochdale. Second, T. Robinson, Ulverston. Highly Commended, H. Thompson, Milnthorpe.

GAME, any other variety.—First, H. Thompson, Milnthorpe. Second, J. Brough, Carlisle. Highly Commended, J. Doney, Aspatria. SPANISH.—First, W. Cannan, Bradford, Yorkshire. Second, P. Mackay, Millgrove. CHICKENS.—First, W. Cannan. Second, J. Towerson, Whitehaven. Commended, J. Towerson.

DORKING.—First, Mrs. Dixon, Rheda. Second, J. Bywell, Moresby. Highly Commended, J. Doney, Aspatria; J. Todhunter, Whitehaven. CHICKENS.—First, J. Robinson, Garstang. Second, E. Topping, Lane-end. Highly Commended, J. Towerson, Whitehaven; M. Borthwick, Flinby. Commended, J. Doney, Aspatria.

COCHIN-CHINA, any variety.—First, W. Cannan, Bradford. Second, R. Jefferson. Highly Commended, R. H. Nicholas, Newport; F. W. Earle, Prescott; R. Jefferson.

HAMBURGS, Golden-spangled.—First, W. Cannan, Bradford. Second, W. G. R. Jones, Parton. Highly Commended, J. Robinson, Garstang; Commended, W. B. Clarke, Whitehaven.

HAMBURGS, Silver-spangled.—First, J. Robinson, Garstang. Second, W. Cannan, Bradford.

HAMBURGS, any other variety.—First, W. Cannan, Bradford. Second, J. Webster, Whitehaven. *Chickens*, any variety.—First, B. C. Curwen. Second, W. Cannan, Bradford. Highly Commended, W. B. Clarke, Whitehaven; A. Thompson, Cross; R. H. Nicholas, Newport; J. Webster. Commended, J. Hetherington, Lamplough Hall.

POLAND, any variety.—First and Second, H. Beldon, Bradford.

BANTAMS, Game.—First, R. N. Nicholas, Newport. Second, J. Mashiter, Ulverston. Highly Commended, J. Bywell, Moresby; J. Hall, Wigton. Commended, H. A. Clarke, Aspatria; T. Christopherson; J. Cragg, Kendal; C. W. Brierley, Rochdale; J. Mashiter, Ulverston.

BANTAMS, Gold and Silver-laced.—First, W. Cannan, Bradford. Second, J. Bywell, Moresby.

BANTAMS, any other variety.—First, H. Beldon, Bradford. Second, D. A. King, Moresby Cottage. Highly Commended, R. H. Nicholas, Newport; J. Bywell, Moresby.

DUCKS, Aylesbury.—First, B. C. Curwen, Harrington Rectory. Second, H. Beldon, Bradford. Commended, M. Borthwick, Flimby.

DUCKS, Rouen.—First, W. G. R. Jones, Parton. Second, J. Towerson, Whitehaven. Highly Commended, W. Cannan, Bradford; J. Frears, Corkickle.

DUCKS, any other variety.—First, F. W. Earle, Prescott (Black East Indian). Second, W. Cannan, Bradford (Wild Ducks). Highly Commended, J. Cragg, Kendal (Call Ducks); T. Bell, Ulecats Mill (Muscovies). Commended, Mrs. Dixon, Rheda (Mallards); H. Beldon, Bradford (East India); J. Hetherington, Lamplough Hall (Musk Drake); J. Towerson, Whitehaven (Wild Mallard).

PIGEONS.

CARRIERS.—First, J. & W. Towerson, Egremont. Second, R. Pickering, Carlisle. Highly Commended, W. Cannan, Bradford; J. & W. Towerson. Egremont; H. Miers, jun., Whitehaven. Commended, S. Sherwen, Whitehaven.

TUMBLERS, Almond.—First, A. L. Silvester, Birmingham. Second, R. Pickering, Carlisle. Commended, W. Cannan, Bradford.

TUMBLERS, Bald-headed.—First, T. Kew, Westmoreland. Second, H. Miers, jun., Whitehaven.

TUMBLERS, any other variety.—First, H. Yardley, Birmingham. Second, J. & W. Towerson, Egremont. Highly Commended, W. Cannan, Bradford; J. Harrison, Linethwaite. Commended, S. Sherwen, Whitehaven.

POWTERS.—First, H. Yardley, Birmingham. Second, W. Cannan, Bradford. Highly Commended, M. Irwin, Whitehaven; C. W. Brierley, Rochdale; R. Pickering, Carlisle. Commended, T. Kew, Westmoreland.

FANTAILS.—First, A. G. Brooke, St. Bees. Second, R. Brisco, Egremont.

JACOBS.—First, W. Cannan, Bradford. Second, A. L. Silvester, Birmingham. Commended, A. G. Brooke, St. Bees.

TRUMPETERS.—First, J. & W. Towerson, Egremont. Second, W. Cannan. Highly Commended, H. Yardley, Birmingham.

BARBS.—First, A. G. Brooke, St. Bees. Second, M. Irwin, Whitehaven. Highly Commended, A. G. Brooke; M. Irwin; A. L. Silvester, Birmingham.

TURBITS.—First, R. Thompson, Kendal. Second, A. L. Silvester, Birmingham. Highly Commended, R. Brisco, Egremont; R. Thompson; J. & W. Towerson, Egremont.

OWLS.—First and Second, J. & W. Towerson, Egremont. Highly Commended, W. Cannan, Bradford. Commended, S. Sherwen, Whitehaven.

ANY OTHER VARIETY NOT SPECIFIED ABOVE.—First, M. Irwin, Whitehaven. Second, W. Cannan, Bradford. Highly Commended, M. Irwin; H. Yardley, Birmingham. Commended, R. Thompson, Kendal.

RABBITS, Lop-Eared.—First, J. W. Cowill, Egremont. Second, H. Beldon, Bradford.

ANY OTHER VARIETY.—Prize, J. Todhunter, Whitehaven.

GAME COCK.—First and Cup, C. W. Brierley, Rochdale. Second, Mrs. Dodds, Halifax. Third, T. Robinson, Ulverston. Highly Commended, J. Rixter, Whitehaven; J. Mitchell, Egremont; R. T. Choyce, Whitehaven; F. R. Locke, Whitehaven; J. Weeks, Bootle; C. W. Brierley; T. Robinson. Commended, H. Beldon, Bradford; J. Mashiter, Ulverston; J. Brough, Carlisle. *Cockerel*.—First, T. Robinson. Second, J. Blenkinsop, Maryport. Third, H. Beldon. Highly Commended, T. Forsyth, Maryport; I. Wilson, Parton; J. Mashiter. Commended, J. Hall, Wigton; J. Cragg, Kendal; J. Gelderd, Kendal; C. W. Brierley.

SWEETSTAKES, (Turkeys).—E. Weston, Bootle. *Goldfinch*.—W. Lyon, Whitehaven. *Neatest Bird Cage*.—W. Robinson, Whitehaven.

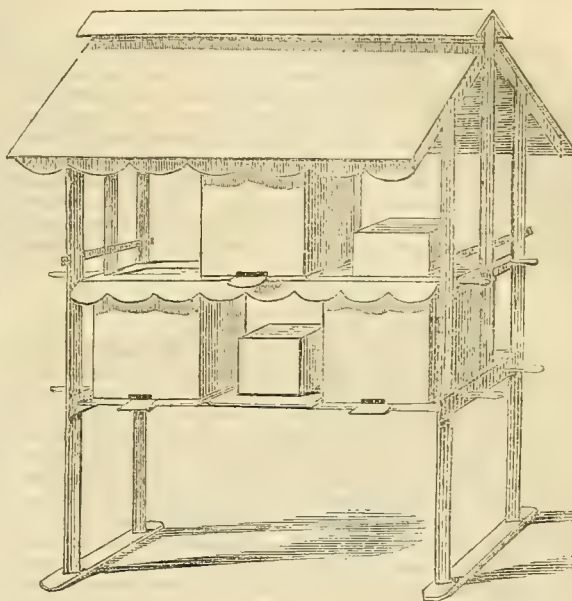
Edward Hewitt, Esq., of Sparkbrook, near Birmingham, officiated as the Judge.

A MEMBER OF THE "LONG FIRM" CAUGHT.

A YOUNG man, named William Ridgeway, was brought up on remand at the City Police Court, Feb. 25th, charged with having stolen a hamper containing provisions and other articles, the property of Mrs. Hampson, Moss Side. At the previous hearing of the case an accomplice, named Lowe, was also charged with the offence; but, as the police had reason to believe that Lowe was merely the victim of his companion, he was yesterday removed from the dock to the witness-box. His evidence, however, supplied no new facts, except that he was acting under instructions from Ridgeway. In the course of the examination it was stated that the hamper containing pigs, for which Lowe inquired at the railway station, arrived soon after Lowe had taken the prosecutrix's hamper. It was addressed "J. W. Ridgeway, Esq., Bentinck Lodge, Manchester." On the follow-

ing day, a man who claimed ten guineas in payment of these pigs arrived in Manchester; but, as he could find no one to give him the money, he returned the pigs to Ireland. In reply to the magistrates, Sergeant Torr, of the detective police, said that the prisoner was a member of the notorious "long firm." He obtained a livelihood by writing to different parts of the country for goods, for which he never paid. He was committed for trial.

BEE-HOUSE.



MUCH has been said from time to time in the columns of your valuable Journal on the merits and demerits of bee-houses; and when I say bee-houses, I mean such buildings, be they of wood or other materials, where the single hive or a whole series of hives is entirely concealed from view. There can be little doubt, I think, that a house such as I speak of, though it prevents the hives suffering from the effects of weather, rain, and so forth, does effectually preclude the admission of that fresh and healthy atmosphere around the hives so conducive to the well-being of the bees themselves. But, again, I think the bee-hive may be too much exposed, and that its inmates may suffer material harm from a want of a proper and suitable protection. If, then, as it appears to me, the protection in the way of an enclosed house is not a thing much to be desired, and if the ordinary earthen covering be not altogether a suitable protection, something, I feel, is required whereby the two evils resulting from too close a protection on the one hand, and from an unsuitable one on the other, may be so rectified as to produce a good result, and this good result may, I think, be brought about by what I would call

THE OPEN BEE-PROTECTOR.

It will be found of simple construction; while it allows of a free current of air passing around the hives, and is so open that the sun's warmth may find its way to each hive, and so tend to the early and more rapid increase of a now large population, it yet effectually keeps off the extreme solar heat, and is also a sufficient protection against wind and storm.

In the model I have forwarded with this communication, it will be seen that the lower frame (fixed) is a barred one, and for this reason, that in the event of the frame being only partially occupied with hives, little or no wet may lodge on the exposed part. The upper frame, also barred, is moveable, and is retained in any required position by two wooden bars running through the main supports of the protector. This moveable frame is furnished with eaves to protect the lower tier of hives from the weather, and being barred, allows of supers being easily worked on the lower hives independently of its own position. The whole is surmounted by a wooden roof, the front a fixture, the back worked on hinges to allow of a more easy access to the upper tier of hives. This, again, has a small coping

roof so constructed as to allow of a free current of air between this and the lower roof, guarding also the upper hives entirely from rain.

Being somewhat a novice in bee-keeping, my ideas as to the suitability of a construction, such as I have attempted to describe as a protection for bees at all times, and in all weathers, may be entirely wrong. However, I am inclined to think that we novices may sometimes make a happy hit, and that more experienced apirians than I at all pretend to be, may not altogether despise the simple protections of "the open bee-protector."—A. K. H., *Westhorpe*.

APIARIAN NOTES FROM MORAYSHIRE.

BEES first seen this season working in the open air on February 10th; on the 13th carrying pollen freely from flowers of early white and yellow-striped crocuses, snowdrops, *Jasminum nudiflorum*, and *Arabis verna*. Vegetation considerably in advance for the season. Weather for the last ten days clear and fine, with slight frosts at night. Observed on the 10th inst. some turnips in full flower in the open field. Furze and daisies flowering commonly. In the gardens Mitchell's Prince Albert rhubarb in the open quarters has stalks 6 inches long.—J. WEBSTER.

BEES IN BUILDINGS.

IN answer to the query of "A NORTH-STAFFORDSHIRE BEE-KEEPER," December 30th, 1862, I have seen the experiment tried different ways, ending in different results—viz., a colony in a garret or attic, south-east aspect, 14 feet from the ground, in the centre of a window 3 feet wide, and about 3 feet from the glass to the centre of the room. It began to breed earlier than usual, and did well, throwing two swarms in that situation. Others I have seen lower down, 1 foot 6 inches to 2 feet 6 inches from the ground, which did very well at a certain season, but in the early spring they did not do so well, for being so low on the ground the damp from the stone wall retarded their operations; and it being close, confined to the side, they never swarmed, for getting into the corner between the hive and the wall, they either lay out inactive, or commenced making combs in the space. With regard to trying them in a building with a north-west aspect, it would not do in this locality, as all the heavy storms come from that direction. They might do very well in good honey weather, but as the honey season generally lasts only about two weeks here, they would probably lose a great many bees in ordinary weather.

Of all the aspects for bees, I have proved to my perfect satisfaction after about fourteen years experience on that point, that a sheltered north aspect is the best, for in winter they are never decoyed out by the tempting rays of the sun, and in summer they work more constantly, and produce more honey, as they are always nearer one temperature. I have always found that a west or south-west or north-west, is the very worst situation for bees, all the other directions being preferable by far to the last-mentioned.

As a proof of what I have stated, I have seen it tried all ways, and as I have a bee-house with the hives facing in all directions, the stocks standing from north to south-east, are always preferable, for the driving storm scarcely ever touches them, and dryness is the great secret in having good thriving hives.—A LANARKSHIRE BEE-KEEPER.

[Thanks for the above. We shall always be glad to hear from you.]

DEATH OF A HIVE'S POPULATION.

A *Disappointed Bee-keeper* sends two pieces of comb from a hive which she has lost within the last three weeks, and begs to be informed what has killed the bees. The hive is one of Neighbour's. The zinc slide over the entrance was partially closed, there being the little space to admit of single bees leaving or entering. One slide at the top was removed and the feeder placed over it, and the cover then placed over the top. The food was not eaten, and evidently not required, as the hive contained a good deal of honey as good as the specimen sent. The hive shows no appearance of damp except those spots where the bees are clustered, a piece of which is sent, and is perfectly free from insects. The bees were all right three weeks since, and were found dead yesterday. The queen was there, and

seems to have died in the same way as the others. Can a fright kill bees? for in a high wind about a fortnight since, the cover which was let down in front of the stand broke loose and flapped a good deal against the hives till secured. Another hive in the same place was also dead, but evidently of dysentery, though they had a good supply of honey in their cells and were perfectly clean.

[Of the two pieces of comb which accompanied the above inquiry, one contained sealed honey of excellent quality, which, of course, perfectly negatives the hypothesis of starvation, whilst the centre of the other is covered with mildew and dead bees. They certainly were not frightened to death; but such a disturbance as is described may indirectly have contributed to the fatal result by causing a number of bees to disperse into the colder parts, of the hive, where they became so benumbed as to be unable to return, whilst the main cluster was so diminished by their defection and chilled by the dampness of the comb, that the whole perished during the next frost. Why moisture should have accumulated on that particular comb whilst all the others remained dry, appeared to us at first an inexplicable mystery; but on showing it to an experienced apirian friend he at once referred it to condensed moisture dropping from the feeder; informing us at the same time of a case in point which had occurred in his own apiary, in which he had found a cluster of dead bees on a mildewed comb under precisely similar circumstances.]

WEST RIDING CONSOLIDATED NATURALISTS' SOCIETY.—The fifth quarterly meeting of the above Society, established for the more rapid dissemination of knowledge in the various branches of local natural science; for making each society acquainted with the natural history of the district of the others; and for the exchange of specimens, &c., was held in the large hall of the Assembly Rooms, Leeds, on the 17th ult., at three o'clock in the afternoon. The meeting was attended by members of the Leeds, Halifax, Huddersfield, Wakefield, and Heckmondwike Societies. After the despatch of the usual routine business, the Chairman requested that any member who had specimens would lay them on the table, when several specimens of Lepidoptera, shells, &c., were produced, among which we noticed three fine specimens of *Antiope*, which were exhibited and verified to have been caught in Wakefield, by Mr. Talbot, of that place, also *P. iota* in the larvæ, pupæ, and imago state, all animate, and bred from the same batch of eggs, by Mr. B. Gibson, of Wakefield. Mr. John Connell, of Leeds, exhibited a series of fossil shells from the Leeds carboniferous formation, and most liberally requested any gentleman present to select specimens for their own cabinets, which generous offer was most freely responded to. The Rev. T. Hicks, B.A., president of the Leeds Naturalists' Society, lectured on "Land and Marine Shells." The lecture was illustrated by coloured diagrams, and the manner in which the lecturer explained the action of the bivalves, the formation of pearls, the provision for renewing the broken shell, and the other interesting phenomena elicited by the topic, gave evidence of a most careful study, extensive research, and a thorough knowledge of the subject.

OUR LETTER BOX.

DEVIZES POULTRY SHOW.—The conduct and management of this Poultry Exhibition is above all praise. I have never had my birds during the eight years I have been an exhibitor returned so expeditiously from any poultry show, and I have never in any instance had the prize money obtained remitted so promptly. Other poultry shows would do well to imitate so good an example. I really hope the Devizes Show will continue to flourish. Such excellent management is well deserving of patronage; and, if the period for holding it were somewhat more judiciously chosen, I have no doubt it would secure the success it so well merits.—P. C., *Oswestry*.

M. SORA'S POULTRY ESTABLISHMENT (*W.*).—We cannot guide you, and the expense of a visit thither we do not think needed, for we believe that we have information on all points connected with poultry which may be fully relied upon; and if you will explain the points on which you want information, we shall be happy to impart it to you. You must make up your mind to begin in a small way, and you must not be discouraged if you fail at first.

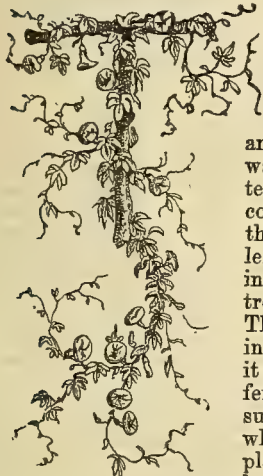
FOOD REQUIRED BY POULTRY (*Clumber*).—We can only answer your question with a qualification. The quantity fowls require depends much on their condition. If they have come from a place where they have been fully, if not over, fed, they require but little. They are full of meat and fat, and nature is satisfied and at rest. If they have been on short commons they are ravenous and in a hungry condition. Nature requires food, and for a time at least they are great consumers. Taking them at a medium, we consider a pint and a half of corn should keep a full-grown Dorking during a week, having no other help than that derived from seeking in grass and shrubberies. Half the quantity should be enough in a farmyard where there is threshing going on. Ground food is cheaper than whole food, and oats are better than barley for the purpose. The whole of the corn should be ground, and nothing taken from it.

WEEKLY CALENDAR.

Day of M'nth	Day of Week.	MARCH 10—16, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				degrees.			m. h.	m. h.	m. h.		m. s.	
10	Tu	Lungwort flowers.	29.959—29.876	59—51	S.W.	.24	28 af 6	53 af 5	morn.	20	10 32	69
11	W	Elm flowers.	29.828—29.648	55—37	S.W.	.04	26 6	55 5	21 9	21	10 16	70
12	Th	Wych Hazel flowers.	29.697—29.642	58—35	S.W.	.06	24 6	56 5	30 1	(	10 0	71
13	F	C. Loddiges died, 1826. G.	29.990—29.914	54—38	N.	.02	22 6	58 5	28 2	23	9 44	72
14	S	Squill flowers.	30.112—30.084	49—38	N.E.	—	19 6	vi.	16 3	24	9 27	73
15	SUN	4TH, OR MIDLENT SUNDAY.	30.098—30.013	49—39	N.E.	—	17 6	2 6	54 3	25	9 10	74
16	M	Whortleberry flowers.	29.950—29.813	46—38	N.E.	.46	15 6	3 5	25 4	26	8 53	75

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 50.6° and 33.5° respectively. The greatest heat, 67°, occurred on the 10th, in 1826; 12th, in 1841; and 15th, in 1828; and the lowest cold, 7°, on the 10th, in 1847. During the period 152 days were fine, and on 100 rain fell.

THE RESPECTIVE MERITS OF HOT-WATER AND FLUE HEAT.



THE very courteous letter of Mr. Craw, at page 9, on the above subject, calls for some further remarks; and if in giving my views on this or any other matter, I shall in any way depart from the line of courtesy which graces Mr. Craw's communication, I can only say that rude contradictions, and still less personal offence, are never intended in any article of controversy in which I am engaged. There is the less chance of such intention, inasmuch that, I think it agreeable at times to find a difference of opinion on some of the subjects brought forward; and when the merits of each of the plans recommended are placed before the reading public, a just conclusion may be arrived at as to their respective advantages. John Bull has generally sufficient discernment to know what plan will suit him best, and it consequently receives the support it deserves. The subject now under consideration is one of the utmost importance, not only to the professional gardener, but to the numerous class of amateurs who with limited means are anxious to combine to the utmost economy with efficiency.

A competition between hot-water pipes and flues is likely to enlist a much greater number of advocates on the side of the first-named plan than on that of the other; but this does not dishearten me from advocating the claims of the lesser favourite. It was in certain cases only that I ever meant to urge its claims to distinction, and the general reader will easily comprehend that my purpose was not to urge it as suitable for all places requiring heating, but for those so circumstanced as to fuel and other things, as to make it advisable to adopt the much-despised flue. To make my purpose clear, it will be necessary to allude to collateral matters bearing on the heating of glass structures.

In large places where a number of forcing and other houses are connected together, it is almost needless to say that a well-constructed hot-water apparatus is decidedly the best mode of heating yet known. I give this opinion without any reserve whatever as to the price of fuel or other local circumstances. The respective claims of the various boilers and other fittings I will leave until another time: suffice it here to say, that I cordially agree with Mr. Craw, and others, that for such large and varied structures hot-water pipes stand pre-eminently before flues. But when an amateur puts up a small greenhouse to contain a few plants, or, perhaps, a vinery, which he is not particular about forcing very hard,

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it then becomes an object of consideration to him to adopt the cheapest and most efficient mode of heating that he can consistently with a tolerable certainty that it will work well.

Now, my experience teaches me, that although hot water heats and does its work well on a large scale, it does not do so when the parts are diminutive. Although a large or moderate-sized boiler answers admirably, a small one is often a source of continual trouble and vexation. The reason of this is obvious enough. A fire of fair size will act and do its work well; but a very small one fed by some of those self-feeding contrivances recommended by the inventor, is liable to go out altogether before consuming one-fourth of the fuel, the fuel sticking in the throat of the hopper or feeding channel. This is one reason I have against heating small houses with diminutive hot-water contrivances, and I have seen several disasters from the cause I speak of; while to avoid them, a frequent and confining attention is required, alike inconvenient and punishing to all but the ardent admirer of the contents of the house. This is one of the cases in which I either would advise the old flue, or suggest another description of boiler and heating apparatus than many of such as are now in use.

The next case in which flues have advantages, is in such a place as the one where I noticed they had been worked so long—Ravensworth Castle, where coals are cheap, even more so, I believe, than Mr. Craw has estimated them at. But allowing them to cost 4s. per ton, it follows that it is hardly so necessary to go to a great expense in erecting a heating contrivance to economise coals at that price, as it would be if they were 34s. per ton, and even greater extremes than these sometimes are met with. In my own practice, the highest price I remember ever giving for coals was 40s., and the lowest 1s., or 1s. 6d., and it appears that economy of fuel at the last-named price is not a matter of sufficient importance to be worth spending a large sum in the erection of a peculiar mode of economising fuel. It is, therefore, in places where coals are cheap that I think the merits of the old-fashioned flue are often overlooked; for supposing the saving in coals to be one-half, or even more, it is not an important affair where they are so cheap, and in like manner where the structure requires only to be kept at a low temperature, as for instance, an ordinary greenhouse, where it is only necessary to apply fire to prevent the internal atmosphere falling below 40°, the number of times a fire is really wanted is comparatively few.

Take, for instance, the present winter—an unusual one it must be admitted; but up to the time I write, the 16th of January, we have not had sufficient frost yet to kill out-door Geraniums. Some variegated ones in a rustic vase in front of my cottage, fully exposed, that were injured and lost most of their leaves in November, by some frosts we had then, have evidently not been killed in the stem, as they are now shooting out again. Firing for greenhouse purposes has, therefore, only been necessary to drive out damp; and the frosty nights in which a fire is required to protect the plants, will, most probably,

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be few this season. Thus, even where coals are dear, the expense of a hot-water apparatus may be saved in a house of this kind. I grant the case is widely different, when a minimum of 55° is wanted, instead of one of 38° or 40° being maintained. In the former case a continual fire is wanted, and the most economical one is, no doubt, the best, and in such cases hot water stands pre-eminent.

To make the matter of absolute cost appear more plain to those not having had much experience in heating a garden structure, I will give a very common example. Supposing that an amateur wishes to erect a lean-to glass house against a wall that already exists, and at the back of which there is convenience for a fireplace; and assuming the house to be 40 feet long by 15 feet wide, and of a proportionate height at back, the question is how to heat it. Most likely hot water will be recommended. Now, to heat a single house like this, which we suppose to be a plain substantial structure, the hot-water apparatus will cost very little short of one-half the amount which sufficed to erect the building, and, possibly, more than that. This is a large item, and the saving of coals in the heating of one house only is not so much as where there are several all heated from one source; besides, a hot-water apparatus on a large, or moderately large, scale is not half so tedious to manage as a very small one.

Now, this is by no means a solitary case. Many amateurs have the means and wish to erect a house like the one alluded to, with a shelf for plants and other internal fittings, but they feel they have committed an error when, after the house is erected, they find the heating apparatus so costly. To such I would say, Inquire at what expense a flue could be put up, and if that be one-third the cost of the more fashionable mode, it is for you to decide which plan you would like to adopt. The attention and management of both are much alike in regard to trouble—easy enough in both cases, and both liable to go wrong through carelessness.

It would be easy to multiply instances where the flue answers all the purposes of a heating medium; but, be it remembered, I by no means oppose it to hot water in places where many houses are connected, or where they all want warming to something like stove heat. In such cases to use the flue, unless in the coal country, would be imprudent; but this subject as well as that of the comparative cost of a flue with that of hot water, I have gone into more fully in another article, on the "Heating of Horticultural Buildings," so that it is needless inserting it here. I cannot, however, omit repeating that in which I am pleased to find Mr. Crow coincides with me, that the blacks from a smoke-flue are not half so bad as those from the fire of a boiler heated by coal. With regard to the maintenance of a steady heat by flues, a little practice will enable the knight of the stokehole to do that with greater nicety than he ever can with hot water. I speak this from experience, having many times in early life had upwards of twenty flue-fires to manage, and with due attention to the appearances of the weather at ten o'clock at night, so regulated the quantity of fuel put on, that the thermometers in the morning seldom showed more than two or three degrees difference from the point aimed at, and very often that point was exactly maintained; and this without any attention after the hours I have mentioned until six the next morning. Practice alone can insure this, and in the case of a fire put on at bedtime on the sudden appearance of frost setting in, there was, of course, some delay and uncertainty; but generally the night attention required by flues is not greater than that necessary for hot water, and I have never known a flue half so tedious as some hot-water contrivances are.

Of the relative merits of the heat emitted by the new system there is a diversity of opinion, some asserting that that given off by hot-water pipes is more moist and genial to vegetation. That it may be more genial is not unlikely, but in what way it can communicate moisture I am at a loss to know, unless the mode of heating be the open-gutter plan. Certainly, however, the heat is an agreeable one, and unless the pipes be newly painted there is never any unpleasant smell or vapour arising from them. This is, unfortunately, not the case with the flue, for when the fire is first lighted after the flue has been out of use some time there is a very disagreeable odour given off, and now and then there are absolutely escapes of smoke. It is, therefore, best to put on the fire in the daytime and allow the ventilators to be open, and after the flue is dry the smell ceases. When flues are in regular work, there are many who affirm that the heat emitted is less sluggish than that of hot water, the current of air being greater. Whether this be so is more than I can affirm, but it is

certain that in many old-fashioned houses the plants do remarkably well under the old flue system.

I will conclude by again recommending the intending builders of a greenhouse or late graper, to inquire the respective costs of hot water and a flue. If he find the cost of a hot-water contrivance for heating two small houses will exceed what would build a third, and put flues into them all, and if he happened to live in a neighbourhood where fuel is cheap, I leave it for him to decide whether he would rather have three houses than two. This plain way of placing the matter is no vague theory, and is easily understood by any one inquiring what the heating contrivance for single houses costs.

J. ROBSON.

THE ROYAL HORTICULTURAL SOCIETY'S SCHEDULES FOR 1863.

FOR what purpose, we may ask, was the Royal Horticultural Society resuscitated? Did not the late Prince Consort imagine that when he fanned into life that languid spark which had management had pretty well extinguished, it was for the encouragement of floriculture and horticulture? We have now had some little experience of the results, and we may well ask, Was it not for these purposes re-established?

I could say much on many points showing that those objects have not been regarded; but I must confine my notes to my avowed object, and will turn to the schedules.

The times for which the shows are fixed first demand a word. I do not enter into the question of fixing the great shows on the same days as those at the Royal Botanic Society, for this might be laid to the charge of one Society as well as the other. But there were two shows which were eminently successful last year—the Hyacinth Show in March and the Rose Show in July; and what have the Exhibition Committee done this year? They put the Hyacinth Show into February—three weeks too soon; and paid the penalty in having about the tithe of the attendance, and in having several of the most popular flowers wholly unrepresented.

But of all insane things their treatment of the Rose Show is the most mad. Last year they took, I believe, £800, and cleared £400 by it. One would have thought that so good a source of income would have been fostered to the fullest extent: but no! They have killed the goose, and no more golden eggs are to be had—having actually done away with the Rose Show and added it on to their July Exhibition! One knows pretty well what a favourite the Rose is; and how is it possible for persons thoroughly to enjoy it when they have another exhibition to see at the same time? It will be like poor Mrs. Harris trying to see the International Exhibition and the Soane Museum in one day, and coming away with a confused notion that it was very surprising how people could wear such old-fashioned watches now-a-days, and how kind it was of the Queen to send such a large piece of gold as the Victoria trophy when so many thieves were about.

Passing by the spring schedules, only remarking that they seem to be peculiarly shabby, and that there was not much wisdom in requiring Auricula-growers to exhibit six varieties of alpinas and only eight of the ordinary kinds, when, as I believe, there are not more than a dozen kinds of the former and about 150 of the latter, I pass on to the large shows; and one cannot but be at once taken aback at the very large sum given for Orchids—indeed out of the £452 offered in prizes, £113 are offered at the May Show for them, and £124 for stove and greenhouse plants, or more than half for these two classes alone.

I may be told that Orchids are such very expensive plants to grow that it is necessary that large sums be offered for them. Very true, but so are Azaleas. I do not think I am far wrong in saying that a house in which a dozen such Azaleas as are exhibited by the principal growers could be well managed, would grow a collection of Orchids of some five hundred plants; and when the expense of taking them to and from the Show is considered, the balance is all against the Azaleas—not more than three or four plants can be placed in a van capable of containing the whole twenty Orchids.

Again: Is it not time that something be done in restricting the size of greenhouse plants? It is not, as it is with Azaleas, that you obtain a mountain of bloom, for the *Boronia*, *Chorozemas*, *Aphelexes*, &c., which one is now sick and tired of seeing, never make that display; and *Ericas*, hardwooded and difficult plants as they are, are restricted. Why should not

greenhouse plants share the same fate? Next, on what principle is it that amateurs are placed in a more favoured position than nurserymen? "Oh, they sell their plants, and it is an advertisement for them!" But is this to be considered in endeavouring to bring together the best display that can be obtained? I think not; for surely every encouragement should be given to those who so largely maintain the credit of these exhibitions.

Very much was said last season, when the complaints of the florists were brought forward, about the desire of the Council to meet their wishes, and conferences of some members of the Committee with that body were mooted. With what feelings of disgust, then, does one see that, instead of a forward, a retrograde movement has been made! Not only have no fresh flowers been introduced, but Tulips have been excluded from the May Show altogether, while no attempt has been made to introduce Pansies, which are then in their prime.

I object to the term "florists' flowers" altogether, but am compelled to use it for want of a better, although it is indefinite, and might be made to embrace now almost everything that is grown; so that nothing could be more *ad captandum* than the paper that appeared in one of your contemporaries, comparing the sums spent on florists' flowers and on other plants, and showing how largely the florists gained. The truth is, that there is a sort of foolish prejudice in the minds of the Council against cut flowers. Some they cannot do without, but they have tried their best to nullify what they do offer. It is, I believe, the cause of their abolishing the Rose Show as a distinct exhibition. It is also the cause of their peculiarly shabby autumnal show (of which more anon); and to it I suppose we must attribute the exclusion of the Tulip, Pansy, Pink, Carnation, Picotee, and Ranunculus from the great shows.

What folly it seems to be not to endeavour to please all parties. £50 or £100 might very well be spared from stove plants, Orchids, &c., and would satisfy a very large number of real lovers of flowers. As it is, signs of discontent are showing themselves elsewhere. A Chrysanthemum Society has been formed; and one would not be at all surprised to find that this extended itself to other flowers, as was suggested by more than one speaker at the meeting where it was established.

I must ask you to permit me to recur to this subject next week, as my simple desire is to benefit floriculture, while at the same time I do not wish to injure the cause of a Society at whose shows I am—AN EXHIBITOR.

VINES INJURED BY MICE.

I WISH to offer a few words *in re* the mice, as we lawyers say, in answer to an inquiry of your correspondent "R. F.," who weekly favours us with his valuable notes on the "Doings of the Last Week."

He speaks of the ravages of this shrewd little destroyer upon his Vines, and inquires whether anybody else ever knew the like. I never did until this year. I have known rats destroy by wholesale the roots of a fruitful Vine in a garden belonging to my sister at no great distance from this; but I have never known mice do any injury in this respect until the present year.

My Vines, three in number, are planted outside my house, which has apertures for the stems quite sufficient to admit a good supply of air, and, of course, any number of mice. One day my attention was excited by a sort of rustling nibbling noise, which was unusual; but I did not at first give much attention to it. Day after day the same sound struck me, and at last I began to think there must be some cause for it. I accordingly made search, and was not long in discovering the cause; for there sat, as sleek and as fat as high feeding could make him, Mr. Mouse, just under the front shelf of the greenhouse, and in close contiguity to one of my Vine stems. I could not deal with the offender at the moment, but it led me to make an investigation, the result of which was that I discovered that all my three Vines were gnawed quite to the inner bark by this pestilent little enemy. I immediately went to work, and set four or five traps with the most tempting baits I could think of—peas, beans, and new cheese—but all in vain; he preferred the sweet juices of the Vine to all my dainties; and at last I was obliged to cast humanity to the winds, and transfix him with a fork, and so I delivered myself from my enemy, and I hope saved my Vines. Had he been allowed to continue his ravages a little longer I fully believe it would have been all over with them, and I do not yet feel certain they are safe.

I should mention that it was not on the Vine stems only that he had feasted, for he had treated in the same way a good many bedding Geraniums which stood on the shelf in front of the house; these he had barked all round, and of course they were completely destroyed. I subsequently caught a second, not by the same cruel process, but in one of my traps, which confirms me in the view I have been led to take, that at this season of the year mice go in pairs, and, therefore, if you mean to exterminate your enemy you must deal a double blow.

A word or two now as to the cause of this unexampled inflection. Generally in this quarter of my garden I have early Peas and Beans. This year I have none, and my garden has been particularly bare of everything that would seem to be the legitimate food for this destroyer.

As the thief says when taken, "We must live somehow," and so, as there was nothing for them outside the house, my little friends thought it no trespass to venture inside in search of a livelihood, and have paid the penalty.—R. R.

A FEW DAYS IN IRELAND.

STRAFFAN HOUSE.

(Concluded from page 169.)

We must now finish by giving some account of this very striking flower garden, consisting of two massive parterres which present themselves on entering the gate, one parterre being placed on the left hand, and the other on the right hand of the main gravel walk which divides them from each other; the parterre on the one side is a counterpart of that on the other side. The main walk is 9 feet in width. A plan of one side is here given. The beds are all nicely Box-edged, and divided from each other by gravel paths of 3 feet in width. These parterres, each 120 feet by 56 feet, were laid out by Mr. Kelly; and the Hon. Mrs. Barton and Hugh Lyndoch Barton, Esq., take great interest in the arrangement and planting every season.

One of the charms of this garden for flowers placed in a kitchen garden is, that just like a similar garden at Raith, which we noticed some years ago, when looking at the flowers no views or considerations of the merely useful are obtruded upon you, unless, perhaps, a bright vision of luscious Grapes in the vinerias at the farther end already alluded to. Everything connected with the kitchen garden is excluded from sight or thought by a fine Privet hedge on each side, 10 feet in height, though planted only a few years. In front of this hedge, longitudinally, are a series of bold wide arches covered with hardy creepers, with fine Hollyhocks in the openings; and in front of these again, each in its separate bed and at equal distances from each other, a fine row of healthy large-headed tree Roses of equal height and of the best kinds. Standing on the central walk, on whichever side you look you are presented with a fine rich background to reflect the brilliant colours in the beds. We must content ourselves with a few words on the position of the parterres, the styles of planting, and a hint or two to be considered if not adopted.

The first impression as the eye goes from side to side of this garden is one of overpowering brilliancy, from the vast blaze of colours presented in one uniform slope or level. This very brilliancy, the great number of beds, and their nearness to each other, are apt, when looked at from a distance, to mingle and merge together, so as to give variety of shade instead of distinctness in colouring. This would be still more the case but for the incline of the ground.

Such parterres, to be seen to the very best effect, should have such a position as they would have enjoyed, had they been one on each side of the fine flight of steps that takes you to the panel gardens. The next best would be the position they now occupy, but with that centre walk some 2 feet higher than a regular ground level of the flower-beds. The third best is that which has been adopted, not a ground level the same as that of the walk, but rising from it by a gentle incline on each side. By this means the plants in the farthest beds are brought nearer the eye, and are seen more distinctly than if all the beds had been on the same level. This effect was also frequently increased by the taller-growing plants being used next the line of Roses, and the dwarfier ones next the middle main walk; but always so as to preserve uniformity of slope, showing the advantage in such an arrangement of studying heights as well as colours.

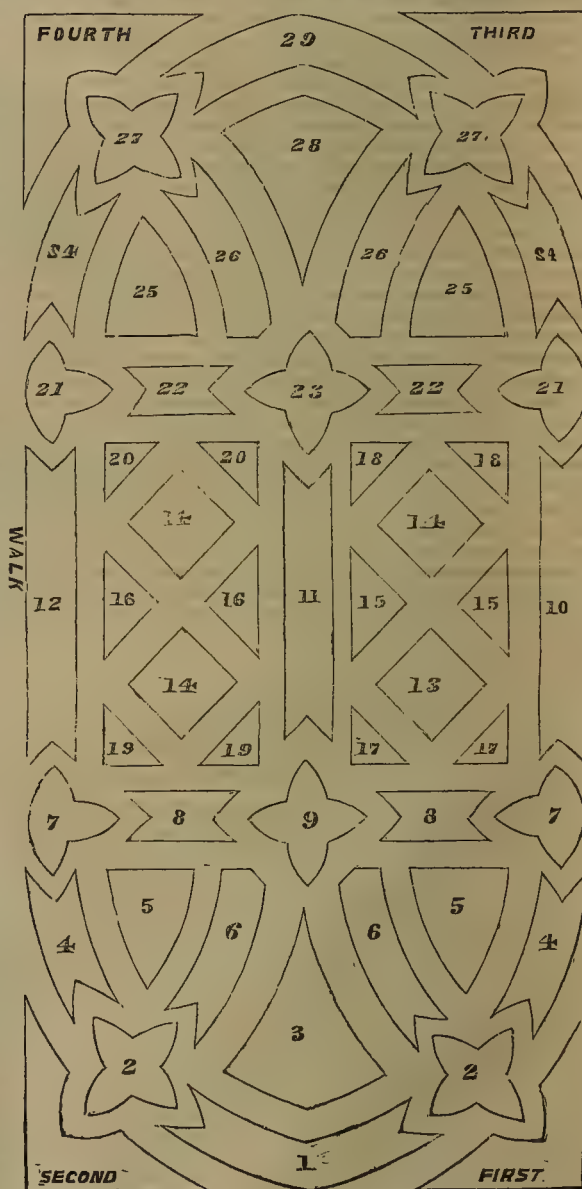
"Uniformity of slope! Why that is next thing to uniformity of level, or keeping clumps on the level!" we think we hear a learned gentleman say, who wrote us such a nice letter last week,

that we hope he will give the purport of it somewhat enlarged to the Editors for the general benefit; the purport of the part of the letter to which we are now referring being an advocacy for planting beds on the level instead of elevating them at all in the centre—in other words, objecting to the opinion we expressed of the raised beds on the terrace of circles at Woodstock. Now, with all due deference to the opinion of our kind Mentor, we should not easily be convinced that that terrace would have anything like the same gorgeous effect, if each circle were planted so as to be level across; but we thoroughly agree with him, though we should not object to a few prominent raised parts, that in such a parterre as is here represented, if placed not only beneath the eye but below the level of the feet of the spectator, the more level each bed is from side to side, and the more uniform the general level of the beds throughout, the better will be the effect. To raise the beds of such a parterre much in their centres would throw the whole into a series of ridge and furrow; and, therefore, when looked at from a distance, little except the ridges of the farther beds could be clearly seen. The same principle must be kept in view in the slightly sloping ground of these parterres. The beds as a whole should not only be level, and plants of similar height be used as much as possible so as to lessen pruning and pegging, but the rising slope of the ground may even be added to, by having the tallest plants next the Roses. Any great break in the uniform slope would act as a ridge and conceal what was beyond. Circumstances, therefore, should regulate treatment and modes of action. We see no reason why a single bed, a terrace of a line of circles, or even an avenue of beds, whatever their form, should be treated the same as a close-packed parterre, over which the eye is intended to sweep at once.

The beds of these parterres were not only well filled, but there had, on the whole, been an extremely successful attempt made to secure the desirable level and slope. If you ask us what was the system of planting as respects colours adopted, we should be inclined to say, it was a system thoroughly orthodox, and yet perfectly heterodox. Even a passing examination would have given you examples of shading, examples of contrast, instances of balancing, and instances of uniformity; but then these appeared to come in less as a matter of primary design than as adjuncts to carry out the main idea, which seemed to be that each parterre should in itself form a harmonious whole constituted of as diversified parts as possible. It was, therefore, but seldom that the opposite pair or balancing-beds were planted alike, or even of similar colours. We never could please ourselves with this mode of planting, and we never were thoroughly satisfied with what has been done by others. As carried out at Straffan, it was by far the best we had seen, and that most likely because the idea was not driven too hard. There must have been ten times more thought required than any mere simple system of centering and balancing, and to us the latter with all its simplicity is the most pleasing. We have had many rubs on this subject already; and, as in the case of the raised circles, we expect to get many more from the ladies and gentlemen of progress. Well, after a fair share of bantering, we have gone to some places to see the working-out of this grand new idea where variety is to be everything, and balancing and uniformity nothing. We have seen single beds with six or seven patches of colour and of all heights and sizes, and frequently the highest where the lowest should be. We have been asked to admire the beauty of a geometrical group where not only no two beds were at all alike in colouring, nor yet any bed that had its own ends and sides balanced either in colour or in height. And then there were ribbon-beds and borders looking one way, with tall plants at the back, and low plants between tall plants, and all for variety. And, again, there were ribbon-borders that faced two sides, with one side filled with tall plants as if they meant to go to the clouds, and the other side not only dissimilar in colour, but clothed with plants so clinging to the earth as if they wished to gravitate to its centre; and all this striving for variety and much scheming for effect ending in what most people, except the planners, looked upon as a careless, unmeaning pitching of things together. One of the most earnest of these mere variety advocates, pointed somewhat triumphantly to a pretty pair of ponies in a phaeton carriage, one cream-coloured, the other a piebald, like a magpie, and exclaimed, "You see I will have variety in everything." "Not quite yet," was the calm reply; "the two sides of the carriage are yellow, the two wheels are blue. What a pity there should be any uniformity."

Could we see the desirableness of encouraging this mere taste

for variety instead of any attempt at balancing in regular geometric parterres, we should have given the planting in these parterres at Straffan in 1861 as combining variety and some little duplicating and balancing with much harmony and beauty. But as Mr. Kelly has most kindly given us the lists of several years' planting, and told us to take which we liked, and say and do just what we liked with them, we have with some reluctance taken the planting of 1862, because assured by visitors that the results were at least equally gorgeous with 1861, because we ourselves are more pleased with the more simple mode adopted, and because Mr. Kelly himself, after being so successful in planting for variety, has last season adopted chiefly the balancing system.



The beds are all numbered, except the four large ones at the four corners, which are named first, second, &c. The parterre on the left-hand side of the centre walk was thus planted:—1, *Lobelia speciosa*; 2, 2, *Yellow Calceolarias*; 3, *Tom Thumb Geranium*; 4, 4, *Lord of the Isles pink Verbena* and *Saponaria calabrica*; 5, 5, + cross of *Tom Thumb*, filled up with *Flower of the Day* and *Manglesii Geraniums*; 6, 6, *Purple King Verbena*; 7, 7, *Annie Clayton Verbena*, white, and *Cerastium tomentosum*; 8, 8, *Mrs. Archer Olive Verbena*, maroon, and *Rouge et Noir Verbena*; 9, *Yellow Calceolaria*; 10, ribboned—

centre Golden Chain Geranium, sides *Lobelia speciosa*; 11, Perilla centre, *Tropæolum Stamfordianum* sides; 12, ribboned—*Heliotrope* centre, sides Tom Thumb Geranium; 13, 13, *Cerise Unique* Geranium, and Lord Raglan Verbena; 14, 14, Silver-edged and *Manglesii* Geranium; 15, 15, *Gazania*, and Mrs. Moore Verbena; 16, 16, *Victory Verbena* and *Tropæolum elegans*; 17, 17, *Mesembryanthemum tricolor* and *Lobelia*; 18, 18, *Lobelia* and *Mesembryanthemum*; 19, 19, *Mesembryanthemum* and lilac Verbena; 20, 20, lilac Verbena and *Mesembryanthemum*; 21, 21, white Ivy-leaved Geranium and *Cerastium*; 22, 22, *Rouge et Noir* and *Hendersoni* Verbena; 23, yellow *Calceolaria*; 24, 24, pink Geranium and Mrs. Mildmay pink Verbena; 25, 25, cross + Tom Thumb, filled with Flower of the Day and *Manglesii* Geranium; 26, 26, Purple King Verbena; 27, 27, yellow *Calceolaria*; 28, Thompson's King Geranium, scarlet, with dark horseshoe leaf; 29, *Lobelia speciosa*. Angle beds:—First, centre row of *Hendersoni* white Geranium; row on each side of Thompson's King, scarlet; and two rows on each side of *Manglesii*. Second bed, centre Oakleaf Geranium; then two lines of scarlet *Duchess of Leinster*, and two lines at side of cinnamon-scented Geranium. Third bed, *Shrubland Pet* centre; Silver-edged Geranium, two lines; pink Ivy-leaved, two rows all round. Fourth bed, *Cooperi*, scarlet Geranium for centre, fine; two rows of *Hendersoni* on each side; and two rows round the sides of *Cerise Unique* Geranium.

On the right-hand side, the same figures and numbers being next the walk:—No. 1 is Miss Trotter Verbena; 2, 2, yellow *Calceolaria*; 3, *Madeline*; 4, 4, Purple King; 5, 5, + pink cross, filled with white *Saponaria* and *Cerastium*; 6, 6, *Duchess of Leinster* and *Commander-in-Chief* Geranium; 7, 7, Miss Trotter and *Defiance* Verbena; 8, 8, Purple King Verbena; 9, yellow *Calceolaria*; 10, Flower of the Day centre, filled with *Hendersoni* Verbena; 11, centre Scarlet Geranium, filled with *Lobelia speciosa*; 12, *Manglesii* Geranium and *Venosa* Verbena; 13, 13, Mrs. Mildmay Verbena and Lord of the Isles; 14, 14, Annie Clayton and Bridesmaid; 15, 15, *Gazania* and dwarf Purple *Nosegay* Geranium; 16, 16, *Géant des Batailles* Verbena and *Crimson Nosegay* Geranium; 17, 17, cinnamon-scented Geranium and *Mesembryanthemum*; 18, 18, *Monoth* Verbena and *Harkaway* Geranium; 19, 19, *Evening Star* Verbena and *Mesembryanthemum*; 20, 20, *Mesembryanthemum* and cinnamon-scented Geranium; 21, 21, *Evening Star* and Lord of the Isles Verbena; 22, 22, Purple King Verbena and *Lobelia*; 23, yellow *Calceolaria*; 24, 24, Emma and Hector Verbena; 25, 25, pink cross + Verbena, filled with Annie Clayton, surrounded with *Cerastium*; 26, 26, Tom Thumb and *Duchess of Leinster* scarlet Geranium; 27, 27, *Amethystina* Verbena; 28, yellow *Calceolaria*; 29, Lord Raglan Verbena. First angle bed, scarlet, centre row of Tom Thumb; two rows on each side of *Manglesii*; and two rows of *Lobelia speciosa*. Second bed, *Perilla*; centre row, *Tropæolum elegans* two lines, and two rows of *Variegated Alyssum*. Third bed, variegated crimson Ivy-leaf Geranium; centre, pink and white-flowering Ivy-leaved—a fine bed. Fourth bed, centre *Trentham Rose* Geranium; two rows of Thompson's King, and two rows of *Variegated Alyssum*.

In looking over this plan, we should say that the plants are more alike in height than in 1861; but it will also be noticed that the tallest are the farthest from the walk, so as to keep the regularity of the slope. We found crossed beds, which, no doubt looked well, but we miss some beautiful mixed beds of Geraniums and Verbenas, which we admired very much. It will be noticed that the parterre is balanced (and the figures are just cut out for being balanced) with similar colours, except the two long ones in the middle, and the four corner beds, though, in our opinion, it would have been as well if the same rule had been applied to them. Very likely, too, we would have balanced both sides of the walk, making uniformly the rule here likewise. This has not been quite discarded, but the prominent idea is to make each parterre a separate garden in itself, and here, most likely, tastes will ever vary, just as one lady may prefer to see a finely matched pair of horses for her carriage, and another may prefer the colour of the pair to be as dissimilar as possible. The parties that pay for the horses and the flower-beds have the best right to gratify their own views on the subject. The *Mesembryanthemum tricolor*, &c., just suit the little beds in the centre, and in bright weather are very sparkling. Some light or white colours more in the centre would tone-down brighter colours at the sides; but the want of whites is neutralised by the masses of bright yellow, such as on the lefthand side, in figures 2, 2, 9, 23, 27, 27, which alike lighten-up and give a balance to the whole

parterre. Still whites in such a bed as 11, or 9, and 23, would be very telling.

We have said so much on the level slope of the beds in such a garden that there can be no mistake upon that point. Some regular abrupt breaks in that level are quite a different thing. At present the unbroken expanse of brilliancy is overpowering; and considering the points of view from the walk, a few stand or rest-points for the eye would be desirable. A vase, or a basket, or a raised bed at 9 and 23, so that the plants should be some 3 or 4 feet above the general level, would accomplish this. Less lofty baskets might be formed at 2, 2, and 27, 27. We throw out this hint with some hesitation, and would be glad if Mr. Kelly would try the effect of tall-flowering plants in 9 and 23, &c., and tell us what he thought of the effect. Such raised beds would, in our opinion, enable us to examine the garden more in detail, make each parterre into several instead of one bewildering and overpowering feature, and in a less degree, but on the same principle, do for them what the raised lofty columns do for the somewhat level splendour of Carton.

Beautiful as these gardens are in summer and autumn, perhaps the most interesting times for the young professional to see them would be March and April. We do not know what are the makeshifts then that Mr. Kelly resorts to, to keep and harden-off gradually such a number of plants as are required for these different gardens, but we have no doubt that many of the makeshifts then resorted to must be very instructive. We can well believe that at such times mind and body are too exhausted in the evening for entering with full zest into the demonstrations and shoutings of welcome, and climbing of the knee of some seven youngsters, "striving who first the envied kiss shall share." Ah, but the thought of these pledges to the future add not only sweetness but energy to toil! It would almost be better than a farce to observe how the attempt to frown-down such child-like merriment and affection would be treated in such a case; as young children, like pet dogs, by the strong instincts of their nature, read every lineament of the human countenance with more unerring accuracy than the most learned physiognomist.

Owing to unfortunate circumstances, which we need not here mention, though receiving the most courteous kindness, we did not see so much of Mr. Littleboy, the land steward, as we should have desired, as he is most justly considered one of the best practical agriculturists in the country, and equally anxious, with his worthy employer, to improve the estate, and improve the condition of the people by increasing the comforts of their homesteads, and giving plenty of employment. Of this we should have known a great deal if we had never seen Straffan; for, from the proprietors of hotels to the drivers of cars, each and every had something to say of the kind noble-hearted owners and their managers. Perhaps it might be only an idea of ours, but yet we could not help noticing often that in such circumstances of kind improving landlords there were manifestations of an enthusiasm of affection, and an earnestness of outspoken gratitude, which are rarely exhibited on this side of the water.

These farms already alluded to are managed by Mr. Littleboy, with the assistance of several bailiffs. On the home-farm twenty-five dairy cows are kept for family use and breeding, and the rest is appropriated to flocks of sheep. Other two farms are also chiefly under grass. Mr. Kelly went with us to Irishtown, which is the principal tillage farm, and where a fine new stead- ing was built in 1856, we understood, from designs and under the superintendence of Mr. Littleboy. The buildings are in the parallelogram form, 242 feet by 147, built in a most substantial manner, and contain stalls for tying-up a hundred cattle and thirteen farm horses, and boxes for fattening twenty-four pigs; and there are two loose yards, each holding twenty cattle, with covered sheds attached. A fixed engine of nine-horse power stands in the centre, and drives the following machinery—viz., threshing-machine, sawing-machine (cross-cut and planing), grist-mill, oilcake-bruise, oat-bruise, pulper for cattle food, and large steam-tub, holding two tons of Turnips, which can be cooked whilst the men are at their meals. Threshing was going on during our visit, and nothing could be more complete; the straw was all carried into a barn adjoining the cattle-sheds, the chaff put beside the steamer, the light grain separated and transferred to a bag, the fine clear equal grain elevated and conveyed along the granary, all fit to be taken at once to market. The oat-bruise, also elevates and turns the bruised Oats into a hopper, and when taken out for the horses a handle is turned, which acts on an indicator in the steward's office, so that he at once knows the

number of feeds taken out in a day, a week, or a month. The cattle-sheds are also complete, forming three sides of the parallelogram, with railroads in front of the feeding-troughs of cattle and of horses, connected with the boiler-house, pulping-house, grain-bins, and hay-house; so that all can be fed expeditiously from the trucks, there being turn-tables at each corner. One side of the cattle square contains twelve loose boxes for cattle, and the remainder are tied up in double stalls. By such means labour is much lessened; but here, as elsewhere, the economising of human labour power, and even the greatly increased activity of the individual workmen, have not tended to diminish but rather to increase the number of workmen employed on the farm. In winter all these stalls are full, and the cattle receiving their allowance of pulped food, cut straw, chaff, &c.

On these farms more than a hundred men are regularly employed all the year round, there being besides a great addition to these in summer, and large companies for drainage and other improvements almost constantly at all seasons. Two blacksmiths, two carpenters, and two painters are kept constantly for routine daily work, and all large jobs are done by contract by other masons, carpenters, &c. A number of cottages are either fresh built or renovated every year, with upstairs bedrooms, &c., that the labourer may not only have "the privilege to toil," but a comfortable home when the toil of the day is over. All these cottages have a bit of land attached, generally ranging from half an acre up to as much, at times, as two acres.

We are averse to speak dogmatically on any subject on which our knowledge is limited, and yet after all first impressions are often the true ones. Our short visit to Straffan left a strong impression on our minds, confirmed by all we heard elsewhere, that like true beneficence which ever carries with it a double blessing, the works in progress were conferring benefits on the employer and the employed—on the former in the shape of an improved estate, and greatly augmented happiness from seeing others happy; and on the latter from increased comfort and stimulated and rewarded industry. There are people on this side of the water who will form no idea of Pat, except as the idle, tattered, ragged fellow, leaning against a gatepost, or holding up the crazy walls of his domicile, as represented by the caricaturist. In all caricatures, there must be a spice of truth, otherwise they would be flat and fail of their object; and in times that are past at any rate, the artist might find no difficulty in obtaining as an object a poor fellow from whom all hope had next to departed, as after every endeavour he had failed to obtain "leave to toil." The caricature, however, is no type of the industrious Irishman. We wish those who still have doubts, could pop in quite unexpectedly as we did, at the Irishtown farm at Straffan, on a threshing day. To say that the men were working like clock-work, would give no idea, unless you associated the regularity of their movements with the rapidity and dispatch of a railway train. We have been in many manufactories and workshops, but we never saw more intelligent activity, except, perhaps, in some large iron-forging and iron-working establishments. All honour, then, to those who are leaving it no longer as a problem to be worked, but as a great fact demonstrated, that the great cure for idleness and its wretchedness are plenty of work and an equitable remuneration for labour.

R. FISH.

DOES APOTHEME ENTER PLANTS?

You will recollect that I started by refusing to accept "J's" conclusions until he gave his authorities, and it is well that he has now done this; and if he writes again on such abstruse points, I hope he will not forget that it is very essential for an unknown writer to give, in this way, some weight to his opinions.

Your correspondent says he regrets "that I would not be convinced by a million experiments," because he thinks "conviction contrary to a foregone conclusion must be impossible" with me, and he then goes on to say that if I am right in this, "Lord Bacon must have pointed out a wrong road to knowledge," &c. Now, I am a steady adherent to Lord Bacon, and will abide by any issue confirmed by him; but I fear your correspondent, like many others, has used his illustrious name as a float when he found himself sinking.

When Bacon told us to "ask questions of Nature," which your correspondent says he did, he did not mean that we should trust to imperfect answers, but that we should wait for the truth, even although "a million of experiments" should fail to elicit it. My complaint is, that scientific writers and experi-

menters now-a-days "jump at conclusions," and give them to a very "gullable" public as authoritative facts. If they would favour us with a little more of Bacon's inductive philosophy, we should be better satisfied.—WM. BAXTER SMITH.

[Here this passage of pens in our columns must close.—EDS. J. OF H.]

POLMAISE HEATING.

I HAVE just read Mr. Robson's remarks upon Polmaise in No. 99. I have had Polmaise at work in my church and school for upwards of ten years, and I think that no system of heating is to be compared with it for cheapness, simplicity, and certainty of action.

I used it for some years in my forcing-houses, but gave it up there, because from want of waterfall it was not in my power to place the stove on a sufficiently low level. Mr. Robson says, "When it (Polmaise) works well, I do not know of any mode of heating that will beat it for the welfare of the plants." I go further and say that I know no mode of heating which equals it, and for this reason, Polmaise is the only system of heating I am acquainted with which keeps up a constant circulation of the air within a house when all external air is excluded. My experience as regards the quantity of fuel required by Polmaise differs altogether from Mr. Robson's, and I have found this method of heating fully as safe as either flues or hot water. The conditions of Polmaise are few and simple, but they must be understood and carried out, or Polmaise will, doubtless, bring those who try it to grief.—W. H.

[We are quite aware that Polmaise answers with those who understand it, and when not too great things are expected from it. It is years ago that we described how well Mr. Lane, of Berkhamstead, made it answer with and without drains, and that without a deep shaft too. All these are secured by the slope of the house, and the pathway forms the drain to bring the cold air to the stove. Something of the same kind will take place in all houses however heated. We are glad you succeed so well with orchard-houses. Yours must be of great size. We would be glad to receive more definite particulars respecting them.]

TREATMENT OF APRICOTS IN BLOOM—VINES GNAWED BY MICE.

THOUGH Mr. Pearson's remarks as to the treatment of Apricot trees in bloom were rather severely criticised, I think there is more in them, and, unlikely as it may appear, in syringing trees in bloom, than Mr. Rivers is inclined to give credit for. Where I live, the springs of 1861 and 1862 were very wet. I believe there was not an entire day without rain during the whole time the Apricot trees against the wall were in bloom, and there were even occasional frosts; yet, notwithstanding this apparently very unfavourable state of the weather, the trees without covering set a fair crop of fruit, whilst those in my orchard-house, which were kept perfectly dry and with an abundance of ventilation (for I attended to them myself, not trusting my gardener), did not ripen a single fruit in 1861, and in 1862 only three or four.

This circumstance leads me to think a gentle syringing might do good rather than harm. My trees look very promising this spring, and I shall try Mr. Pearson's experiment on one or two of them. I am disposed to think none of our horticulturists, even Mr. Rivers, thoroughly understands their treatment in pots; else why under glass are we not as certain of a crop as we are of Plums and Pears?

Your correspondent, Mr. Geo. Burton, to me gives a very unscientific reason with his opinion. How a low barometer in showery weather can make a dry atmosphere is rather inexplicable; if he will test it with the hygrometer he will see. Perhaps I do not comprehend his meaning.

Your regular correspondent, "R. F.," in "Doings of Last Week," reminds me of the mortification I had on replacing my trees in the orchard-house a week or two ago, I had all the pots covered with dry leaves in the autumn; on removing the leaves I found four or five Vines and a Peach tree eaten off entirely by either mice or rats, and four of the Apricot trees, and two Pear trees eaten round, the bark being almost entirely gone for 2 or 3 inches up the stem. Will these live? I have covered the wound with cowdung, then bound it over with moss, which I shall keep damp. There had been both rats and mice in the place; whether

one or both were the depredators I do not know, but am inclined to suspect the latter.—CONSTANT READER.

[The Vines' surviving will depend upon how deeply and how far round the stems the bark has been gnawed away. If in a complete circle and down to the wood, the upper part of the Vines will die, but they will shoot afresh from below the wound.]

PRESERVING GOOSEBERRY-BUDS FROM BIRDS.

I THINK I have at last succeeded in finding a preventive to the destructive ravages of the tomtit and sparrow on the buds of Gooseberry and Pear trees.

Early this spring my fruit trees were attacked, and a great many of the fruit-buds, which are this season unusually forward, were completely destroyed. I immediately procured some guano, and had it broken down to a powder, and sifted through a very fine sieve. I then set a man to water with a common watering-pot some two hundred trees, and as he proceeded with the watering each tree was immediately sifted over, as soon as watered, with the guano. I do not think a bud has since been attacked. It was done when there was no wind; and, consequently, all that did not fall on the trees fell at their base, and will be washed down to their roots the first rain that falls, and promote their growth, so there will be no waste. The whole expense of the man's time and of the guano was about 10s.—something less than three farthings for each tree.

Another suggestion I beg to make is in planting Potatoes. As soon as the tubers are cut sprinkle a little water on them, then throw on them some soot, and stir them over with a spade, so as not to injure them. This prevents wireworm, affords a stimulant to their early growth, and, most probably, prevents disease, as I had last year but about a quarter of a peck out of a considerable quantity at all affected.—W. COPLAND.

SLUGS DESTROYING WORMS.

SEEING that you think the worms eaten by the slug are in a weakened or diseased state, I assure you it is not the case. The slugs catch them when in full vigour both under and above ground. I have worked in different localities almost all round Worcestershire, and a good deal in Shropshire and Herefordshire, but I never saw that sort of slug (a large yellow one) in any other garden than the one I now have the management of; neither did I ever see that slug eat any vegetable. I have a man who has worked on this ground from a boy, he is now turned sixty, and he says these slugs do not eat the vegetables; in fact, he never kills them, nor permits the other men to do so. He first pointed them out, and I could not believe it myself till the men frequently brought me the slug with the worm in its mouth; and I have caught them with their head in the worm-hole, and having a fast hold of the worm, and I have pulled them both out together. These slugs are mostly under ground; yesterday we dug three up, and two out of the three had a worm in their mouth half devoured, the part that was left being in as healthy a state as could be. When they are above ground they are mostly along the walks by the Box-edging, but they are generally in the ground from 6 to 9 inches deep. They seem to suck the inside out of the worm, and to gradually draw the skin in afterwards, and if they lay hold of it in the middle they draw it in double. I have two more men that have worked far and wide in Worcestershire and Herefordshire, both at farming and in the garden, and they say they never saw this sort of slug anywhere else; so that I think it is not a very common kind.—WORCESTER.

IN your Number of the 24th ult. is a reply to a correspondent respecting slugs eating worms. Your correspondent was probably not incorrect in his supposition; one, if not more, species are said to do so. There is a description given of two species of worm-eating slugs in London's "Encyclopedia of Gardening," page 700. One of the kinds he describes I have occasionally found in my garden here, and chancing last night to meet with a specimen I enclose it for your inspection. [It is the same species as that sent by "WORCESTER."—EDS.]

Last year I placed several along with a worm under a propagating-glass to see what would take place. The worm disappeared during the night, but I did not take sufficient care to

enable me to state positively that they must have eaten it. You will perceive that they are not so slimy as the common slug, and that they differ from the slugs with shells (which, by the way, I have never met with near London), in having the shell placed near the hinder extremity instead of on the back or thorax, and not covered by the skin. They are by no means common here; nor, as an old conchologist and collector, have I ever found them anywhere but in my garden.—E. M., *Notting Hill*.

PEACH TREES FAILING IN A COOL VINERY.

THE accompanying letter has just reached us; and as the subject is one of considerable importance, we insert the complainant's letter at full length, with the reply of one of our regular correspondents.

"I should be much obliged by a little information on the probable cause of about three-fourths of the blossom-buds of my Peach trees falling off. The trees were planted at the back wall of a vinery in 1860, in a border about 9 feet wide and 2 feet deep, of good light loam, with a little manure and bones. They made splendid wood in 1861; this was well cut back, and in the following spring, though a good many buds fell a little after Christmas, yet a fair crop was produced. They also made abundance of wood, which was stopped three or four times in the year, and when the wood was ripe the trees were covered with blossom-buds. About Christmas, on washing the trees with Gishurst, a good many of the buds seemed a little shrunk and loose, and since that time they have continued to fall, though they were as healthy as possible last year, and free from insects, with the exception of a trace of red spider.

"After the fruit was gathered last year, the trees were syringed a good many times, and a moderate quantity of water was given at the roots; but during the last four months they have had little or no water, and the border has seemed pretty dry all the winter, though not by any means dust dry.

"As I do not force, the vinery has been cool all the winter, and as the weather has been so mild, the house had generally air front and back, day and night, through the winter, and no fire heat was given except such as a small flow and return pipe passing through the house has afforded, and the trees are now just coming into bloom, though this is very scattered."—J. J.

[Your letter, though carefully written, omits the most important circumstance, and which most probably is the cause of your failure. How many Grape Vines are there against the roof of the vinery of which the Peach trees occupy the back wall? If the glass be pretty nearly covered, it is hopeless to expect Peaches. A few Vine rods may be trained up the rafters, but when they bear and do well there is a strong temptation to allow them to straggle over the greater part of the glass roof, and it is hopeless, then, to look for fruit on the back wall.

We have a large vinery in which Grape Vines are planted in the front in the usual way, and some were also planted against the back wall. The latter have long ceased to be of any use, except at the tops, and we expect your Peach trees have been suffering in like manner. Your mode of stopping the growing shoots three or four times was certainly not likely to produce well-perfected fruit-buds; stopping the gross, rampant shoots, if there were any, very early in the season, and continuing to do so, in order to throw more vigour into the weaker ones, would have been better practice, for buds imperfectly ripened are not likely to produce fruit. Watering is rarely wanted in winter inside a house that receives so little firing: therefore, we think its absence is not likely to have caused the failure.

We would not by any means advise a severe cutting down in winter, such as you say you gave them in 1861. Vines may be cut back with impunity; but Peach trees do not do so well with too much knife work. We hope you did not apply Gishurst Compound too strong. So many causes operate in producing failure, that it is not always to one only that we attribute it. In your case we think it is badly-ripened wood; but if that evil be caused by the trees not having sufficient light, owing to the Grape Vines usurping all the glass, either a part of them or the Peach trees must be sacrificed. Both cannot be fully and successfully cultivated. If, on the other hand, the bad ripening arose from the growth being prolonged in the autumn, the leaves would hang on late, and the tip ends starve rather than mature.

You will most likely be able to judge which of these evils

your trees suffered most from, and from this, in addition to the advice given from time to time in our Journal, on the management of the Peach, you will be able either to find a remedy, or if the Grape Vine be in fault, it then rests with you, or those

with whom you act, which of the fruits you are willing to sacrifice. A few Vines against the rafters of a Peach-house may be tolerated, but too many is] at variance with the well-being of everything else.—J. R.]

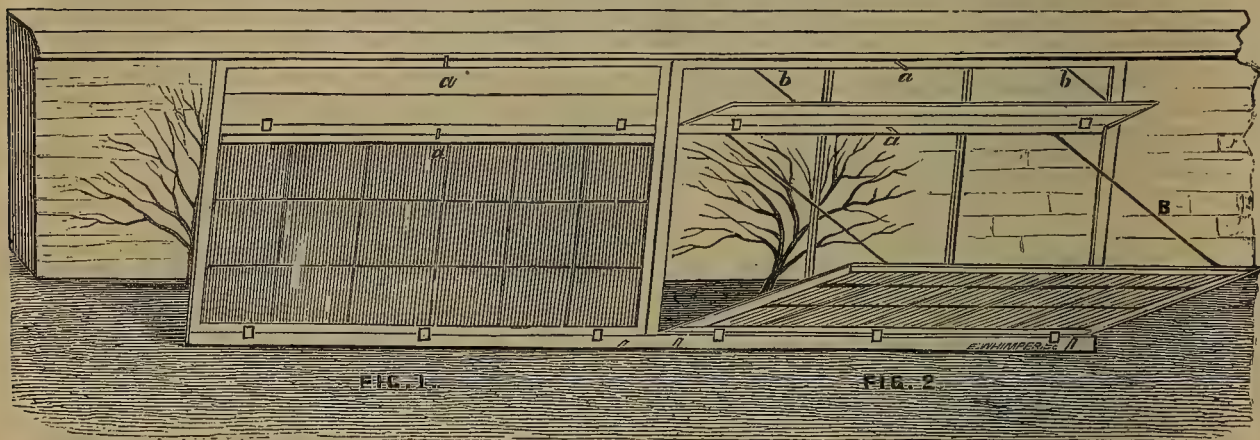
PROTECTING FRUIT TREES.

BEING an amateur and not keeping a gardener constantly, I have experienced some difficulty in coming to a conclusion as to what is best to adopt in order to give my young wall trees the necessary protection with little trouble, and which at the same time would be economical and lasting. I have been scheming to accomplish these objects, and the result is what I have shown upon the accompanying sketch, which almost explains itself.

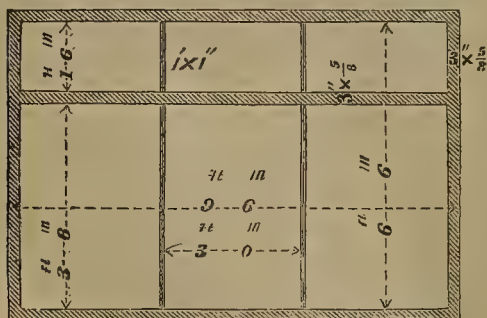
The frames I have made are five-eighths of an inch thick and 3 inches wide, ripped off a deal. The upper shutter is made of two leaves, half an inch thick, of deal ledged together (of course this might be made a light frame filled with straw like the lower one if preferred). It is hinged to the frame by three pieces of leather being nailed to them. The top is fastened, when closed, with a common wood button, as at *a*, *a* in *fig. 1*. The lower move-

able frame is made in the same manner and with the same scantling as the frame itself. It is hinged at the bottom with three pieces of leather like the top shutter; but, instead of plain boards as in the upper shutter, this is filled in with long straw laid in between two spinyarns which are secured to the frame: thus the straw is a kind of thin thatch, protecting the trees from rough wind and frost but not excluding the air.

b b b *Fig. 2*, are pieces of ropeyarn tied to both the moveable and fixed frames or shutters at the tops, and of such lengths as to determine the angle at which the shutters will stand when open. I have so fixed mine that when the morning sun is shining—say 10 o'clock A.M., little or no shadow is cast either upon the wall or tree by them. This hasty and rude description will, I hope, have made the scheme clear to you.



The frames having been set against the wall where they are required, the top is kept fixed and secured by the two splines $1 \times 1'$, *fig. 3*, being tied by a cord to two nails or staples in the wall. The bottom of the frame is secured by two stump stakes.



Being fixed I need scarcely say, that to open the frames all that is required is to turn the button, and the moveable shutters are opened and fall to the required angle. To close them, of course the reverse operation has to be done. Thus a few minutes suffice either to open or close them—an operation of no labour, quite in the compass of a lady's hand. Thus you see the trees may either be thoroughly protected, or fully exposed at pleasure.

When the season is over I intend to have my frames, which are made of a convenient size for the purpose, taken away and packed under cover for another season. I see no reason why

they may not last for a number of years in good condition. Fresh straw, perhaps, in a few years may require to be put in, but this is a very trifling matter.—H. G., Ipswich.

P.S.—May I ask some of your gentlemen's gardeners who contribute to your pages, if they will be so good as to give me their advice as to whether I ought to keep back my fruit trees by shading them or open the frames to give them the full sunlight? The scheme above described gives me easy means to do either. The trees are forward, and, probably, before the month is out we may have coarse weather. I have been keeping them somewhat sheltered. I suppose when the proper time arrives they must be fully exposed.

[We cannot give you a better reply than is contained in this extract from a communication sent to us by the late Mr. Errington, one of the most successful of fruit-growers:—"My Peaches this year, on a W.S.W. aspect, have been abundant. Those on a due S. and S.E. failed. This aspect has something to do with such result, because I have always observed that the blossom opens later there, and the leaves do not blister so much. This last winter, however, remembering what you stated about retarding the blossoming of Peach trees by heaping snow about their stems and over their roots, I adopted every mode I could think of to retard my trees in blossoming on that W.S.W. wall. I unnailed them, and shaded them from sunshine throughout the winter, keeping them covered with wet straw and mats, but exposing them whenever the weather was cold during the day. With the same object I laid bare the roots, and I pruned late. My reward was having the trees bloom fully a fortnight later, and having a good crop. When in bloom they were protected with nets the same as those on the S. and S.E. walls; but on these I had scarcely a dozen Peaches from twice as many trees."

CROCUSES DESTROYED BY SPARROWS.

I PERCEIVE that one of your correspondents asks the cause of the destruction of his Crocuses. No doubt, as you say, they have been destroyed by the sparrows. I have a large quantity of Crocuses, and the sparrows have played sad havoc with them this year, as they have come early into bloom. But there is a simple remedy, which in my case has never failed—namely, to place white cotton or white worsted close to the Crocuses, either round the clumps or lengthwise with the border, supporting and placing it in such a manner that the birds cannot pluck the flower without touching the thread.

I have found mice very destructive in burrowing and eating the roots early in the season; and there seems no better trap than the old-fashioned one set with thread, which they have to nibble before getting guillotined. The traps can be put under old pots or boards to keep the rain off; and there is nothing better than baiting with oatmeal.—JOS. LLOYD PHELPS, *Lee Crescent, Edgbaston.*

WINTERING OLD VERBENAS.

I OBSERVED that you mentioned on one occasion how very difficult it is to take up Verbenas from the beds and keep them. I beg to state my success as regards this matter.

My plant was a fine healthy one of the *Géant des Batailles*. I first proceeded to cut a great portion of the branches away, leaving about 6 inches of each. I put the plant, in a six-inch pot, in a shady part of our conservatory, for about a week, then plunged it in a cold frame, in tan well watered, facing the sun, and kept the glass covered. My plant is now a strong one, with some nice shoots just fit for cuttings, and it will soon bloom if I choose to let it go on. I think this a very good plan if you desire to have good plants of Verbenas in bloom early in the season.—AN ARDENT ADMIRER OF THE VERBENA.

[No doubt your plant is a good one, but a cutting struck early in autumn, and topped, and having the attention you gave to your favourite, would also now be a fine plant. Your experience is a proof of the truth of the saying, that there is hardly a rule without an exception. We have kept old Verbenas over the winter, but in general young plants are better every way.]

GARDENERS' COMPANY.

GARDENERS were once a corporate body, as their charter plainly sets forth. That charter never was of much value; for, like all protectionist schemes, it failed to infuse new life and vigour into the members, and lulled them into the sleep of false security. Opposition is the soul of progress, and competition causes improvement. That the charter was ineffective from the first may be inferred from the fact that a second charter was granted amending the defects of the first. This also came to nothing, for a warrant was issued by Charles I. calling upon magistrates and others to enforce the charter.

The first charter was granted by James I. in 1616. The charters are preserved at the Public Record Office; and the warrant is private property, late in the possession of W. Paxon, Esq., 9, Terrace, Gray's Inn Lane, Holborn, London. "The Worshipful Company of Gardeners," incorporated by James I., A.D. 1616, the seventieth on the City list, consisted of "The Master, Wardens, Assistants, and Commonalty of the Company of Gardeners of London." They were governed by a Master, two Wardens, and a court of eighteen Assistants. Their income was raised by fines and fees, and quarterly subscriptions of 2s. They had no hall.

Could the charter be revived? No. Before that can be done we must have a class of men conformable to the charter. The charter has certainly done no good, and is so outrun by the time that its working would be obnoxious: therefore the charter is a memorable relic of the past and nothing more. But—we hesitate to put the question—could not men having interests in common form a company, become united instead of divided, and aid their mutual needs?

Nobility, gentry, and clergy have associations, merchants their chambers of commerce, farmers their clubs, common tradesmen and workmen their unions; and all men, except gardeners, have institutions more or less upholding their interests and advocating their cause. Surely men having their periodical publications can form a Company useful and honourable. That they

have intelligence is not doubted, but each individually is striving to advance his own interests irrespective of the consequences to his brethren. These causes, with the present system of garden-making, have made gardening what it is—no profession. Owing to gardeners granting free trade—for they were the first free-traders in the country—they let in all classes of the community. If a man only works in a garden a few years—is persevering, sober, honest, and industrious—gives Mr. Head-gardener satisfaction, he is soon sent out as a gardener. Such systems of garden-making have glutted the market. There is no difference between a man who has gone through a course of study and served an apprenticeship and one who has not; providing that they do for the time being work in gardens, both are gardeners.

A gardener according to the charter is a different man. He must serve an apprenticeship, give proof of his competency, and be an enrolled member of the Company before he is permitted to practise. All gardeners must conform to these regulations—that is, within six miles of the City of London, according to the charter, or they would be liable to injunction, fine, or punishment. That was a protectionist scheme then, and thought to be an effectual barrier against quacks; but alas! the quacks eat up the profession. What a stir there would be in the great city if the charter were now enforced; and there is nothing to prevent it, providing there are twenty-one men in London who could conform to the charter, which is disputed, for the charter is as perfectly legal as it was on the day it was granted.

We have six classes of gardeners—viz., 1st, professional gardeners; 2nd, nurserymen; 3rd, florists; 4th, seedsmen; 5th, market-gardeners; 6th, jobbing gardeners; and another class, neither gardeners, cowmen, nor grooms, and yet a little of all: therefore I propose that they be termed utilitarians; but as I ignore their claims to the title of gardener I propose to make a special provision for them hereafter. The first six in 1841 numbered respectively:—Gardeners in England and Wales, 45,751; Scotland, 6277; Ireland, 7422. Nurserymen, England, 1481; Ireland, 121; Scotland, 141. Seedsmen, England, 771; Scotland, 135; and Ireland, 88. Taking for granted that these three denominations represent the six above mentioned, which is not improbable, for all men that work in gardens are styled gardeners, and all florists are nurserymen, we have a grand total of 61,389. In 1851 they were collectively 74,837; and if we measure the increase aright, we should have no less than 80,000 in 1861. Not less than 60,000 of these are dependant on wages; and if we reckon an employer to every six we have 10,000 employers, which we add to the figures before named, and we have 90,000. Then we have amateurs numbering not less than another 10,000, which raises the figures to 100,000.

Could not these various classes be brought into friendly intercourse, united instead of divided? I have long—though but a juvenile—had an idea of a Company which would combine the main characteristics of our national constitution, as employers and amateurs the House of Peers, and nurserymen, gardeners, &c., the House of Commons; both being ruled by an arbitrator or president, not a Yankee, who would exercise his prerogative in matters of dispute between the Houses. The President to be chosen by the members of the Company in the following order:—employers, 4 votes; amateurs, 2 votes; and gardeners 1 vote each respectively.

The Company is proposed to be called "The Company of Gardeners of Great Britain and Ireland."

No gardener shall be admitted a member of the Company unless he can write in a clear bold hand satisfactory answers to the following questions:—1, Name in full; 2, where born, and date; 3, that he has worked in a garden seven years with the intention of learning horticulture and following it as a business; 4, name the places where the seven years were spent; 5, can the applicant have a good recommendation from present employer?—the address of his employer must accompany the declaration, so that the declaration can be verified if disputed by members; 6, that he is willing to pay all fines, dues, and subscriptions, and to further the interests of the Company if elected a member. Nurserymen, seedsmen, florists, market-gardeners, and jobbing gardeners shall make their declaration in like manner, substituting the term of nurseryman for gardener and so on, leaving out the fifth query.

Candidates may, if they think proper, state whether they understand keeping accounts and mensuration of surfaces and solids; whether they can make ground plans; give plans and

specifications for horticultural structures, and useful or ornamental buildings. In botany, to name nine plants in ordinary cultivation out of every ten correctly; to understand vegetable physiology as far as regards the germination of seeds, formation and development of plants; entomology, in its relation to the ravages of insects on vegetation; and pomology, so far as to name and distinguish nine fruits in every ten of such as are commonly cultivated.

Persons answering these queries will be called upon to submit themselves to an examining-board appointed by the Company within two years from the date of their admission. Parties signing the declaration and refusing to be examined to be discarded the Company; but those who answer the call, though unsuccessful, to continue members, but their declaration on application paper to be scratched. Those who successfully pass the examination to have medals of bronze, with the emblem of the gardener on one side with his motto, and the emblem of the country to which the medal belongs; and on the other the value, as first, second, or third. A certificate to accompany the medal, duly signed by the President or his deputy. The value of this is too apparent to need explanation.

Candidates may state if they are a correspondent of any horticultural journal, and which, naming half a dozen of the subjects which they have written upon, if so many; if less, they must not sign, for it is evident they are not professed writers. They may also state whether they have been successful exhibitors, when and where; naming a few instances, and the subjects. Candidates may exercise their discretion about answering these queries.

Candidates giving satisfactory answers to the numbered inquiries shall, by paying an entrance fee of 5s., be registered members of the Company; amateurs, an entrance fee of 10s., their address and remittance shall be a sufficient guarantee of their respectability; employers—and I make a great point of their co-operation—without them we can do nothing, £1.

This entrance money would realise—employers £10,000, amateurs £5000, and gardeners £20,000, or in all £35,000. Now, as gardeners are so peculiarly liable to rheumatic diseases, rendering them unable to work in their old age, and not a few are cut off in the prime of life, leaving a wife and several children destitute—for those reasons we would place the money in the Government Funds, which would afford £1050 yearly, and allow of twenty-four married pensioners being kept in decent circumstances, instead of pining in the poor-house after they have been disabled through no fault of their own, and twenty-four widows or widowers. The former should have £20 yearly for life, or until such time as death severed them, when £13 15s. would be allowed to the survivor. The voting for pensioners to be as follows:—Gentlemen and ladies 4 votes, amateurs 2 votes, and gardeners 1 vote.

Employer members to pay £1 annual subscription, amateurs 10s., and gardeners 10s., or 2s. 6d. per quarter, payable in advance.

Two shillings and sixpence of employers' subscription should be appropriated to the uses of the Charity Fund, which would yield £1250, whereby twenty-four married pensioners and twenty-four widows or widowers could be elected pensioners. It is expected that gardeners would not hesitate to contribute to this fund, say 2s. 6d. yearly; and as they would have precedence over non-subscribers they ought, one and all, to subscribe, which would be ample to keep all their own poor without troubling ratepayers. In that case there would be 384 pensioners on the list.

Seven shillings and sixpence of employers' money to be employed as follows:—One-half, £1875, to be distributed to successful essayists; £78 2s. 6d. to be given to each district (mentioned hereafter), and that, equally divided, again given to the branches, at each of which a prize should be offered for the best essay on whatever subject the employer members shall name, to be competed for by members of the branch. The other half, £1875, to be appropriated to the printing of essays, which shall be at the rate of two for each district, and they shall be chosen by vote. The essays not to exceed 12 foolscap pages. Employers to have copies of the essay volume free, but members to pay 1s. for it. The printer to sell any number he chooses after the above regulations have been fulfilled.

I now come to write of the meeting-places of the Company. Supposing the United Kingdom to be divided into districts—viz., twenty-four for the whole kingdom—i.e., fourteen for England and Wales, four for Scotland, and six for Ireland;

according to this arrangement each district would comprise 4166 members, and the districts being divided into branches of 63 members each, we have 1612. Thus the head quarters of the Company would be in London for England, Edinburgh for Scotland, and Dublin for Ireland; districts to have their head offices at the most central part of the district, and branches to be distributed according to the number of members—fifty to form a branch.

Each district office and branch shall find, furnish, and pay for hire of its own rooms, and all accounts thereto belonging. Each branch to forward 7s. 6d. for each member to the district office, which sum is to be forwarded by it to the head office of the Company, where it shall be applied to the printing of the Company's Journal, and publishing, and other expenses connected therewith, and for those purposes only. The Journal to consist of twenty-four pages of printed matter relating to gardening or horticulture, containing the best of the papers read at meetings of the Company, novelties exhibited, awards, state of weather and vegetation, and communications. Free discussion should be allowed in its pages to members, and reports given on the general business of the Company. I think terms might be come to with the gardening papers of each country, to do the printing for the Company on the condition named hereafter, with power to receive pay for advertisements, an unlimited number, and to sell the Journal at a reasonable price to non-members.

Each member paying 7s. 6d. to the Journal fund would raise a capital of £37,500, of which £8750 should be given to the London office, for the purchase of plant and hiring of offices for the transaction of business connected with the Journal, and other matters; £3750 to Ireland; and £2500 to Scotland. Besides the grant for formation of offices, &c., a further grant shall be made as follows:—Head office of England, £13,100; Ireland, £5700; and Scotland, £3700; for which each member is to receive, free, a copy of the Journal of the country or head office to which his district is attached.

Two shillings and sixpence of each member's subscription to be appropriated to pay for hire of rooms, lighting and warming in winter, &c. The branches shall select their own meeting-places—that is, the most convenient situation—and make their own agreements, for which they alone will be responsible. No doubt there would be great difference of opinion about the meeting-places. Some would say a club-room at a public-house, for the sake of the friendly glass and merry chat; but a public-house is the worst place imaginable, for our proposition is intended to enlighten the mind, to cultivate the intellect, and to improve the man's social and moral condition.

A school-room would be the most economical meeting-place, and one every way calculated to answer the purposes of the Company. Fortnightly meetings should be held, when a short paper would be read, or of such a length that not more than half an hour would be occupied in reading it. Ten minutes to be allowed any member for discussion on the paper. The paper to become the property of the Company. New plants, fruits, and vegetables to be exhibited, for which certificates may be awarded if the subject merited the distinction. Extraordinary productions, and specimens of subjects relating to gardening, might be exhibited, for which a vote of thanks may be given. The meetings to commence at seven o'clock in the evening.

In connection with the Company would be an exhibition fund, in which all could join, non-members as well as members. To this fund members would pay respectively—employers 10s., amateurs 5s., gardeners 2s. 6d., and non-members of the Company any sum not less than 5s.; tradesmen 2s. 6d., and working men and cottage-gardeners 1s. I calculate the subscriptions would realise £50,000, of which £20 to be granted to each branch, £500 to each district, £3760 to the central (or head) of England, £1700 to Ireland, and £1300 to Scotland. Thus each branch would have its exhibition, once yearly, each district two, in May and September, which would be held at different places, the places being chosen by the subscribers; and the central four in April, June, August, and October—also held in different places, these being chosen by the subscribers.

Subscribers of 10s. to have three tickets to attend all the shows of the central, district, and branch of which they are members; those paying 5s. to have two tickets for the central, district, and branch; 2s. 6d. subscribers to have one ticket for central, two for district, and three for branch to which they are attached; 1s. subscribers to have one ticket for one central show, one for district, and two for the branch to which they belong.

The anniversary of the Company to be held at the October meeting of the central, when an account of all the districts would be given, and districts to audit their affairs prior to the meeting. At the end of every seven years there might be a meeting of members from all parts of the kingdom, and an exhibition open to all the world, so that the year of jubilee might be celebrated with *éclat*.

Also in connection with the Company a benefit society might advantageously be formed similar to others, and I have no fear of employers not aiding the movement.

The Company might allow utilitarians to become members, if they thought proper, at the same rate as a gardener, and their employers also, but with this reservation: No utilitarian shall be allowed to take the title of or practise as a gardener, unless he make application as for a gardener and has been enrolled a member by the votes of the branch members, which must be confirmed by the district, and signed by the President. Neither shall a gardener change at will from a gardener to a nurseryman, and *vice versa* throughout; but he, they, or any member must give notice of the proposed change, and have the Company's permission to make it. Offenders to be discarded the Company, to forfeit all privileges and all moneys paid, and to pay all dues.

I cannot forbear proposing that cottage-gardeners be allowed to attend all meetings of the Company, and to pay a nominal subscription, say 1s., but to have no other privileges, except loan of books or papers.—G. A.

[We have inserted this communication as an evidence that there is a spirit abroad among gardeners for the improvement of their profession. It is a communication from a practical gardener; and though the calculated subscriptions are wildly extravagant, and some of the proposed proceedings undesirable, it may serve to awaken attention to the subject.—Eds. J. OF H.]

LANCASHIRE DISTRESSED WORKINGMEN BOTANISTS.

I HAVE received, since the last notice I gave, from Lady D. Nevill £1, which she kindly sends every month; also from a working gardener 2s. 6d. (monthly); from J. R. £1 10s.; from Miss Sloane £1; Mr. Marlow 5s. I have also received a collection of choice vegetable seeds from Mr. Henry Watkinson, of Manchester, which my friend Mr. James Wild, an old florist, kindly distributed amongst forty-one poor cottage-gardeners who are in distress by the cotton panic.

There is a well-conducted young man here who has a good knowledge of both systems of botany, and he would be glad to learn to be a gardener if an opening could be made for him.—JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THOSE who have fully attended to former directions respecting the manuring, trenching, and pulverisation of the soil will now amply reap the benefit of their past labours; they will have a greater depth of staple in proper condition for nourishing the roots of plants, at the same time the ground will work with much greater facility. This has been, and still is, a most extraordinary season, and in the event of our being visited by sharp frost, either this or next month, the result will be calamitous in the extreme. Some are sanguine enough to predict that we shall have no frost this season, and let us hope they are true prophets. *Artichokes*, make new plantations, and fill-up old ones. *Beans*, sow in a sheltered situation, and transplant them in pots or boxes. *Beet*, sow for a principal crop. *Carrots*, sow in the open ground, and thin-out those in frames. *Horseradish*, plant, if there is not sufficient in already. *Leeks*, these should be sown for the main crop, if not in already. *Lettuce*, sow, and harden-off those in frames, to be planted-out as soon as fit. *Onions*, the main crop, if not already sown, should now be put in. *Peas*, sow several varieties for successive crops. *Spinach*, sow a few more rows. *Turnips*, sow early Dutch in a warm situation. Take every suitable opportunity of surface-stirring, hoeing, forking, trenching, and subsoil-trenching, turning in all refuse vegetation, and taking care that no useless crop is robbing the ground. At this busy time both the eye and the mind must be active if any ample amount of produce is looked for in return for the labour bestowed on the preparation of the soil.

FLOWER GARDEN.

Proceed with the operations that involve the necessity of wheeling or removing earth. Complete all planting. March winds are often destructive if the precaution of renewing old stakes and strings rotted by the damps of winter is neglected. Prune Roses generally, and dress the beds with rotten manure. In completing the arrangement of the flower garden duplicate herbaceous plants may be found; these can be distributed about the pleasure ground with excellent effect. Roll and sweep lawns, cleanse and turn gravel walks where necessary. To eradicate weeds there is nothing like handweeding. Fork-over flower-beds, and get them in a wholesome state to receive the delicate plants intended for them.

FRUIT GARDEN.

Planting, pruning, and nailing should now be forwarded as much as possible. These operations cannot be finished a minute too soon. The sap having now commenced its ascending course, broken-off flower-buds and injured shoots will be the certain consequence of delay and neglect. Continue to protect the bloom of Peach, Nectarine, and Apricot trees. Take advantage of dry weather to draw away the soil from the stems of Gooseberries and Currants with a hoe to about 2 inches in depth and over a diameter of 2 or 3 feet, for about this time what is generally termed the Gooseberry caterpillar will begin to be on the alert; sprinkle over the space cleared some soot and wood ashes, returning the earth with the back of a hoe or rake. This is not only a preventive to their ravages, but acts as a stimulating manure to the trees, and the extent to which it may be applied will be very perceptible throughout the season. The early season will render immediate preparations for grafting necessary.

STOVE.

Cuttings of all free-growing softwooded plants, such as the different showy varieties of *Justicia*, *Begonia*, *Aphelandra*, *Poinsettia*, &c., will strike readily in a brisk bottom heat. They will, if well managed, make useful and handsome plants for blooming next autumn and winter. *Achimenes* and *Gesneras* may be repotted, and others, to succeed them, put in. Stove Orchids will be benefited by a little additional warmth and moisture; when it is desirable to prolong the blossom for a considerable period the plant may be removed to a cool house.

GREENHOUSE AND CONSERVATORY.

Some of the early-forced *Camellias* and *Azaleas* will now begin to fade. If they appear exhausted do not force them to expand their last flower-buds, but rather remove them before they expand, in order to invigorate the plants a little. Any *Camellias* that are becoming misshapen or too large may now be cut-in, and if afterwards placed in a nice growing moist temperature of from 55° to 65° they will soon break afresh, and make fine plants. Syringe them daily once or twice, and if necessary give a little manure water. The same treatment is applicable to Indian *Azaleas*, and if the shoots are stopped once or twice during their growing season fine bushy plants will be produced, which will ripen their wood and be ready to bloom in December. All the specimen plants in these houses should be carefully examined to see that their roots are in a proper state with regard to moisture and the drainage clear. *Ericas* to be top-dressed or repotted. *Tropæolums* will require attention. *Pelargoniums* and *Calceolarias* will require increased pot-room. *Dahlias* to be put in action. *Fuchsias*, *Cupheas*, *Salvias*, *Bouvardias*, and other plants for the parterre to be encouraged to afford cuttings. Remove all decayed leaves and flowers, and attend to order and neatness.

PITS AND FRAMES.

Admit abundance of air, water carefully, and continue protection at night as long as there is any danger from frost. Attend to the young stock which is intended for bedding-out, and go on propagating stock for the flower-beds as it can be procured. Top-dress *Auriculas*, *Polyanthuses*, and *Carnations*. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE weather being so mild, planted out in well-aired thoroughly-pulverised soil a good breadth of Potatoes, also Cauliflowers from pots and thinnings from hand-lights, leaving five in each of the lights, watered them, and top-dressed with rich material. Sowed a few more Peas and Beans. Sowed Sangster's No. 1 in boxes on the floor of a Peach-house, to be

transplanted for the first crop out of doors. Planted Garlic, Shallots, and young Onions. The former are placed in drills about half an inch deep and a foot apart, well firmed with the fingers and thumb, and a little charred refuse thrown over them; the latter are fastened in the ground merely by the roots. If a little of the neck is buried likewise, you have little chance of good early bulbs. Sowed Spinach, Radishes, and Turnips in the open air. Sowed also a few on the south side of a raised bank to receive some protection, to have them early, being doubtful if we can give them a slight hotbed this season. The white Turnip Radish is useful for early work. It serves in many cases for soups, &c., instead of early Turnips, and we have found many clever people who did not know the difference on the table, and they can be had several weeks before Turnips. Generally sow a few White Dutch Turnip and Snowball for the first, but always afterwards the American Red-top. Our *chef* says they are often more delicious than a moderate Melon.

Gave syringings of clear soot water to Dwarf Kidney Beans in pots, to keep away all trace of thrips and spider. Sowed more in boxes for succession. Planted-out strong Cucumber plants in the frame heated chiefly with leaves, which are now hot enough. Was obliged to turn them over in several places and strew with quicklime, to destroy a lot of disagreeable funguses that were running among them. That is an evil to be avoided when leaves are chiefly used. When mixed up with hot dung so as to cause a strong burning heat before being used, there is little danger of these funguses, as the spores are pretty well killed. We have known Melons and Cucumbers on beds where a mild heat was given by leaves much injured by these spawns getting into and taking possession of the soil. We have planted these Cucumbers in pure loam from the roadside without any admixture whatever. I am very anxious to remove all trace of the Cucumber disease, which has now troubled me several years in pits, frames, and out of doors. Last season we were little troubled with it until Cucumbers became plentiful even out of doors, as the early crops were everything that could be wished. Vegetable Marrows were also similarly affected, whilst as yet Melons have showed no trace. We have found no remedy like fresh soil and frequent planting.

Top-dressed and put small twigs to Tom Thumb Peas in pots, and removed them from frame into a place where they can be protected before it is convenient to move them to an orchard-house. Stirred the soil about a row in front of an orchard-house.

FRUIT GARDEN.

In addition to the routine of previous weeks, moved Strawberries from the back of a vinery, where they were too much shaded, to the back of a pit, where they can have full light. We always think the fruit ripened in the shade is deficient in flavour. Forked the ground among Strawberries out of doors—that is, merely for an inch or two. Cleared away all the stubble, &c., in which fruit trees had been packed in the orchard-house, and will, if possible, defer setting them out for the summer until we have a wet day. Sometimes we are apt to defer too long for such weather; but as we never like to see a man get wet, there must be a little study of such matters. The early-pruned trees on walls and in pots (Peaches) will want going over again, as there is a greater deficiency of wood-buds this season than usual. What we are pruning now will escape that, as the wood-buds are now perceptible, so that there can be no mistake. Pretty well finished pruning Peaches and Apricots out of doors. We find that some trees that had nothing done to them in the winter are more free from any traces of insects than those we washed and took great pains with. Painted the trees where the blossoms were not advanced enough to permit of its being done safely, preferring the painting to be done before the buds begin to swell much.

A correspondent is in trouble about his Peach trees, as the bricklayers some time ago had spattered them all with lime, which he cannot remove, scrub as he will. We presume it was spattered on before the buds were far advanced, and in that case would do good rather than harm; it would become mild chalk in a few days, would seal up what eggs of insects there might be, and will scale off of its own accord during the summer. There is, therefore, no need, but the reverse, for the attempts to remove it.

As soon as the fruit seemed set in the Peach-house, before the blossoms had dropped, we gave the trees a thorough drenching with the syringe, as, besides a few black beetles, there are signs of red spider on the young shoots, which we never noticed before at this early season; and this after the care bestowed in tho-

roughly scrubbing and washing every part of the house, and removing the surface soil. The watering over the surface of the trees, shutting up early, and sulphur on the heating pipes, will, we trust, soon remove all trace of this red-coated little gentleman.

Moved all the Strawberry-pots from orchard-house, making a bed of them in the open air, and if a sharp frost should come will scatter some straw or rough hay over them. Tied-out Vines in first house, temperature at night averaging 60°, in dull days from 65° to 70°; in bright days, 75° to 85°, with a little air given early. In earliest small six-foot Vine-pit, the temperature is from 65° to 68° at night, and is raised in proportion during the day. The whole of the outside walls of that pit being thatched with straw, comparatively little fire heat is required.

Figs are beginning to push in Fig-house. Pinched the terminal bud, pushing, through the middle with finger and thumb, when it was desirable to throw back the sap into the incipient fruit at the joints; when the shoots push again there will likely be several instead of one, and the most suitable one can be retained. Have still kept the laurel branches on the Figs out of doors, as we may yet have a severe frost, and the shading at present prevents the young fruit pushing so as to be injured. In that case we generally nip across the terminal bud when it swells, as there is no chance of obtaining a second crop out of doors. This stopping throws back the sap on the different joints of the shoots. When long-jointed shoots are made, the tree should be lifted, the roots cut, or the branches ringed. Some time ago I mentioned an instance of Figs proving extra fruitful out of doors owing to the stems being gnawed with mice.

ORNAMENTAL DEPARTMENT.

Scrubbed walks, rolled lawns, pruned Roses, planted edgings of Cerastiums, &c. Find that fine edgings of the white Campanula carpatia are pretty well done for, from the long-continued damps of the winter; wish we had lifted it, and set it in a dry place above ground, as it is a beautiful compact plant. Find, also, that the taller kinds of Lobelias left out have perished from the same cause. Made preparations for sowing lots of seeds prepared the other week. Filled the four lights with Calceolaria cuttings from nipping-off the points of those struck in autumn. Cannot perceive how "ANTIPATHY TO BOTH" can find fault with our mentioning that a piece of Aurea floribunda is not quite so good as the rest of the Calceolarias, more especially as the cause was also given—namely, the using of old effete soil for putting the cuttings in. These might stop a little longer before being moved; but the rest, even after stopping, must be put out soon, or they will injure each other. The cuttings inserted in the frame-beds will stand about 1½ inch apart, and will remain there until wanted; but as soon as rooted the frames will be lifted off for something else, and partial protection given to them.

As soon as possible a bed or two in a similar manner will be made ready for Verbenas cuttings; and generally these plants, from such cuttings left in the bed until wanted, will thrive as well, if not better, than those that have received ever so much attention from separate potting, &c.

Proceeded with potting all plants needing it. Brought soil into sheds for the purpose of being dried and aired, and in all earth-pits and temporary places for protecting bedding plants had them cleared, made ready, and the soil turned over a few inches to be heated and mellowed by the sun's rays. If we do not plant-out until next week will likely turn these beds over several times, so as to dig down or cover-in the soil acted upon by the heat and light of the sunbeams. We do not mind a depth of from 3 to 6 inches for planting-out Calceolarias; but we like a hard bottom and a depth of only about 3 inches for Scarlet Geraniums, as they lift better the more shallow they are planted.

These minutiae are of little moment for those who have a place for everything and know nothing of cramming, but they may be useful to those who have little glass and yet aim at making the most of it.—R. F.

TRADE CATALOGUES RECEIVED.

W. Bull, King's Road, Chelsea.—*List of New and Rare Plants.* 1863.

Downie, Laird & Laing, 17, South Frederick Street, Edinburgh, and Stanstead Park, Forest Hill.—*A Descriptive Catalogue of Florists' Flowers, &c., &c.* 1863.

Francis & Arthur Dickson & Sons, 106, Eastgate Street, Chester.—*Catalogue of Select Agricultural Seeds.* 1862.

G. W. Hay, Church Street, Worcester.—*Spring Catalogue of Kitchen Garden, Flower Garden, and Farm Seeds.*

Robert Kennedy, Conservatories, Covent Garden.—*A Catalogue of Ferns, Exotic and Indigenous.*

Peter Lawson & Son, 28, King Street, Cheapside, London.—*Catalogue of Agricultural Seeds.* 1863.

John Norse, Dursley Nurseries, Gloucestershire.—*Spring Catalogue of Cuttings of Dahlias, Verbenas, Geraniums, and other Bedding Plants, &c.*

Edward Taylor, Malton.—*Catalogue of Agricultural, Garden, and Flower Seeds.* 1863.

Toole & Company, Westmoreland Street, Dublin.—*Spring Catalogue of Vegetable, Flower, and Agricultural Seeds, Plants, Roots, and Implements.* 1863.

J. C. Wheeler & Son, Gloucester.—*Wheeler's Little Book, or Select Seed List.* 1863.

D. Dauvesse, Rue Dauphine à Orleans.—*Catalogue général des Vegetaux disponibles dans les Pépinières.* 1863.

Jamin et Durand, Bourg-la-Reine, Paris.—*Catalogue des Arbres Fruitières, Rosiers, Arbres et Arbustes d'Ornement.* 1863.

Adrien Sénéclauze, Bourg-Argental, (Loire).—*Catalogue général d'Arbres Fruitières.* 1863.

Fontaine & Duflot, 6, Quai de la Mégisserie à Paris.—*Catalogue de Graines des Fleurs.*

Paul Tollard, 4, Place des Troismaries à Paris.—*Catalogue Général de Graines de Plantes Potagères, Fourragères, Economiques, d'Arbres, et de Fleurs.* 1863.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

ROSES MANURED WITH FOWLS' DUNG (A Young Gardener, Dublin).—So far from doing the trees any injury it will benefit them, and you may water them with a weak liquid manure made of it—a peck to thirty gallons of water as soon as the flower-buds appear.

MAKING SODS INTO MANURE (J. L.).—Do not pour sulphuric acid over them, for it would take a vast quantity to kill the weeds in them. You had better have them mixed with lime and salt, turning the mixture two or three times before using it as a manure. A bushel of salt and a bushel of lime to twenty bushels of sods would not be too much.

INSECTS IN ASPARAGUS-BEDS (A. B.).—They are Millipedes (Julus), and one Centipede. We believe that they cause no injury to plants, but feed upon decayed vegetable substances.

WHITEWASH OVER WALL-TREE BLOOM-BUDS (R. N.).—If the whitewash was put on before the buds were much swelled, it would do good instead of harm. Do not meddle with it, it will fall off during the summer.

GRAFTING YOUNG ORANGE STOCKS (W. B.).—Your best plan is to form a mild hotbed, with a bottom heat of about 75° to 80°. Nip the point off your plants, set them for a week in the bed, then take them out a few at a time, and, as near the soil as possible take off a slice of 2 inches long or so from the side of the stock. Do the same with a scion, tie them neatly together, cover with a little clay, or grafting-wax, and syringe every day to keep a close moist atmosphere. They will soon take.

BOTTOM HEAT (N.).—Bottom heat is the heat given to beds or pots from beneath, either by hot water, or by dung, or by fires. We think there must be something wrong in your chamber. Is it close all round? If so, the heat at the slate may at times be too great. We would advise you to put 6 inches of open rubble over the slate, and you might have two or three round small drain tiles in every light, set upright over the rubble, and the upper end plugged. This would help to diffuse the heat equally through the soil, and you can pour water into these tiles so as to have a moist heat at bottom when desirable. If the soil gets caked against the slate the heat will not rise freely, and if it becomes sodden like a morass the plants will not thrive.

TRANSPLANTING CROCUSES AFTER FLOWERING (Felixstow).—By taking them up with as large a ball of earth as possible they may be removed to some other place, and there left to ripen; after which they may be taken up and kept until September, and then planted where wanted next year. They suffer a little by this treatment, but if carefully managed they flower pretty well the following year. Sanders on the Vine will suit your purpose, and give you all the information you require.

GOOSEBERRY CATERPILLARS (J. F.).—There are two caterpillars that attack the leaves of the Gooseberry. The most usual depredator is green, spotted black, and is the progeny of the Gooseberry Saw-fly, *Nematus trimaculatus*. The other caterpillar is yellowish-white, with an orange stripe and black spots. This is the progeny of the Magpie Moth, *Abrazas grossulariata*.

PROPAGATING CLEMATIS (Wyeside).—Cuttings off the young shoots when about 3 inches long do best; or, what is almost as good, laying a few shoots down on the ground, pegging them there, and half covering them, will insure a number of plants, each joint generally rooting, and also sending up a leader.

PASSION-FLOWERS IN A GLAZED PORCH (Idem).—These are planted on a bed with pots of plants standing on them. There is no difficulty whatever in making strong-growing Passion-Flowers grow in your bed, which is 5 feet long by 1 foot wide, provided, in the first instance, that well-rooted plants, which have been in pots, be first planted there. In planting do not break the ball too much. It would be advisable to plant only the hardy robust varieties, as *Passiflora racemosa* and *coriacea*, &c., omitting *P. princeps*, *quadrangularis*, &c., as likely to suffer from the water they may receive from the potted plants standing over them. Let the border be well drained, and we have no doubt but you will be successful in presenting a good show with the aid of *Geraniums*, &c., standing over it in summer, and evergreens in winter.

LIFTING AND CUTTING-DOWN RHODODENDRONS (An Old Subscriber).—If your plants were only recently planted, they cannot want either pruning or moving yet. Generally speaking, Rhododendrons, however vigorous, flower well in favourable seasons, and rarely require cutting or pruning until they become very old and leggy. In that case they may be cut down in March or before, and in doing so it is advisable to leave a little foliage somewhere if possible; but they will grow without. Every season is not favourable to an abundant production of this and other kinds of bloom, and some of the hybrid varieties are more shy than others in flowering. Unless other reasons, as thinning or altering the position, render it necessary, merely transplanting them cannot do much good.

OLD CENTAUREA CANDIDISSIMA DYING OFF (An Old Subscriber).—Like old *Geraniums*, *Cineraria maritima*, &c., some of the old plants taken up out of the flower-beds in autumn do occasionally die, but we never knew them to be more likely to do so than other plants. Some plants we had sent us in December, and which had come 200 miles, or more, about six weeks before that time, and were then shaken out of the pot and subejected to another journey, have grown away tolerably well. Cuttings taken from these, as well as some other old plants that have been in heat all winter, promise to give us a good supply. Ordinary garden soil seems to suit it very well. In too rich soil we expect it will be liable to become more coarse and green-looking. The ensuing season will doubtless find it very much used everywhere.

FUMIGATING WITH TOBACCO (Anna, Norfolk).—The simplest and cheapest way we know of is to place a little sand or mould in the bottom of a flower-pot, to put about 1 inch of common candle into the sand, and then to crumple a few yards of small wire into a lump open enough for the flame of the candle to burn the tobacco that lies over it, and yet not so open as to allow the tobacco to fall between and put out the light. Sometimes we have split up a few bits of deal into pieces like matches and laid this on the wire, putting the tobacco at top. We use this homely contrivance in frames as well as in houses, as it is capable of enlargement or diminution at pleasure. The only thing the amateur has to guard against is not to let anything have the smoke too strong until he sees the effect. Better repeat the dose than overdo it.

CAPE BULB NOT FLOWERING (A Subscriber).—We have known more than one party disappointed in large imported bulbs not flowering, which is only to be attributed to the usual period of rest which all bulbs have being much protracted, and the lack of that bright unclouded sunshine they receive on their native hills. Cape bulbs are subjected to heavy and frequent rains at one period, when they grow profusely, and flower when dry sunny weather sets in, the bulb afterwards ripening and preparing the future flower-spike in embryo. In your case it is most likely the ripening and perfecting process was not completed when the bulb was taken up, and it will require a good growth here to accomplish this. Give it the advantage of a sunny stove until it ripens, after which let it rest the proper time, and it will flower. If it has not been subjected to frost, the mere fact of covering it or not with ashes or moss has little effect on it, the condition above ruling its welfare.

CINERARIA LEAVES INJURED (Amateur, Curragh Camp).—The leaf sent had more the appearance of having suffered from frost than from insects, a broad fringe all around being brown and withered. *Cinerarias* are easily injured by frost. If, however, insects do attack them, which may be the cause as well as frost, fumigate as directed in the case of another correspondent. The flower stem and buds, as well as the leaves, are liable to fall a prey to insects which are best destroyed by gentle and timely fumigations. We may also say that an overdose of tobacco will injure the foliage much in the same manner as that now sent, and it is quite possible your plants may have suffered from that cause.

FRUIT-TREE BUDS DEFORMED (Mrs. W.).—There must be some local cause for the fruit-tree buds becoming so shrivelled and deformed as the one sent to us. Has any pernicious factory smoke found its way to your trees, or is there an escape of gas at the roots, or has poisonous matter of any kind come in contact with the ground? Without knowing more of the condition of the tree, we can have no idea what is the matter with the buds. There does not seem any insect, as American blight or scaly coccus, to account for the disease, and mildew rarely attacks trees of the kind sent. We advise you to look to the condition of neighbouring trees, and if the same as your own, explain to us the features of the locality, and we shall then probably be able to state the cause. The remedy may, perhaps, be out of our power.

RHODODENDRONS DISEASED (Mrs. D., Westmeath).—We think they are suffering from a superabundance of moisture either at the root or in the climate, or from both united. A thorough draining will remedy the evil of too much stagnant water at the root, and possibly drier seasons may be in store for you than the last two or three years have proved. We had a similar case of disease to yours. Some Rhododendrons were planted round the edges of a pond which was low of water in 1857, 1858, and 1859, and they did pretty well; but the rains of 1860 subsequently raised the water level a foot or more, and thereby soddened the ground the Rhododendrons were growing in, and they have gone off the same way as yours, many of them being quite dead. Are your plants by the side of standing water? If so, we fear the evil is incurable, unless they are sufficiently above it to be moderately dry. Many other shrubs suffer more than Rhododendrons from a superfluity of water. If, therefore, draining be practicable, adopt it as soon as possible.

NAMES OF PLANTS, (*P. C.*).—*Rhododendron dauricum*. (*S. D. Goff*).—*Staphylea pinnata*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

JUDGING POULTRY.

To adopt the opinions of our last week's correspondent would be simply to make a poultry revolution. Dorkings without five claws, Aylesbury Ducks with yellow bills! Why, shade of Sydney Smith, "Looking-in on railways would be nothing to it!"

Imagine a Dorking class; comb, colour, and claw, unimportant. Fowls to be judged according to their aptitude for fattening, and their market properties. What a scene when the public was admitted, if the judges had not taken the precaution to "skedaddle." Imagine the poor tired creature, "chopped" as he was making for the door, and brought back to be asked why he did not give the prize to 127, and civilly answering that there was a tinge of yellow on the leg; an absence of tail and fifth claw; an unquestionable leaning to fluff; all of which led him to think there was Cochin blood in it. To the question why he gave it to 91, he said their shape, symmetry, claws, indeed everything, bespoke their purity. Stuff and nonsense, his fowls had bred all through the year, he had had chickens at market every month. His were the largest, they fattened best, while 91 were purely fancy fowls. The old-fashioned nonsense about white legs, five claws, and all those fanciful distinctions were exploded.

This is not so much overdrawn as may be thought. If classes are not judged for points, what are they to be judged for, or by? If the classes are dissected, how many will there be left after those who exhibit for points are deducted from the number?

Shows are over for the season, there is a lull, and opportunely a Society is just formed which has for its object to compile points by which all classes *shall* be judged. The extremes meet. On one point alone they seem agreed—the present style of judging is unsatisfactory. It is amusing to hear people complain they do not know what to breed or exhibit, decisions vary so. Mr. Archer knew what to breed in Silver Hamburgs; Mr. Rake, in Spanish; Capt. Hornby, Lady Holmesdale, and Mr. Wakefield, in Dorkings; Mr. Moss, in Game; Mrs. Pettat, and Mr. Adkins, in Polands; Mr. H. D. Bayly, in Bantams; Mr. Fowler, in Ducks; Mr. Manfield, in Geese. All these were, and some are, uniformly successful. We predict failure for both extremes, and our belief is that rules are simply impossible. The man who cannot judge without, cannot judge with them; and no man can ever fill the office properly who has not either had the experience of many years, or the natural love for symmetry and feather, which amounts to a gift. We do not mean to say there are not mistakes made, and, in some cases, ignorance shown in judging; but, as a rule, complaints come from the unsuccessful. Very often the man who has finished the Red or White Lion, which is to be sign of the village public-house, looks at it with admiration, and when he compares himself with Landseer and Ansdell, is more prone to attribute the difference in their position to the blindness and injustice of the public, or the want of opportunity, than his own lack of talent; and so the exhibitor of three birds, two of which are excellent, and the third very inferior, or the possessor of that mediocrity which with content is the happiest station in life, looks from his commendation to the coveted first prize, or it may be "silver cup," and denounces the incapacity of judges, or asks what ANY ONE IS TO BREED.

Being somewhat looked upon by both sides as the poultry organ, we shall be glad to open our columns to them. The moment is well chosen, and good must be the result.

The supply of table poultry throughout England is notoriously deficient; the price is remunerative. Anything, therefore, that will remedy such a state of things will be a double good.

A BRAHMA POOTRA'S REMONSTRANCE.

IN common with my feathered friends I am much interested in the forthcoming Worcester Poultry Show, and on looking over the prize list I see that the Committee offer a deliberate insult to the kind to which I belong—viz., Brahma Pootras. Now, sir, Mr. Baily, no mean judge, says we are the hardest birds in England, and the best winter-layers; and at Mr. Stevens' sales we fetch higher prices than any other birds. What do you

think of the Worcester sages giving Crève Cœurs a class to themselves, and leaving Brahmas to compete in considerable numbers—for we are a large family—with a lot of French abominations with crackjaw names and few admirers?

Why, sir, both our varieties deserve a class—the dark birds, and the beautiful white ones with pencilled hackles.

"Wise men came from the east;" and if Worcester folk are fair samples of west countrymen, we must not expect much wisdom from the west.—BRAHMA POOTRA.

P.S.—My friend the White Dorking begs me to say that he is omitted also.

DURATION OF WORCESTER POULTRY SHOW.

I HAVE just received the prize list of this Show, a most liberal list, and am only sorry to see the Show is to be open so long. The whole of the poultry have to be in the building by Saturday night, and the Show is to be open to the public from Monday to Friday night; in which case exhibitors will not get their birds back till the Saturday: thus the birds are penned-up in pen and hamper for eight days—quite enough to seriously injure chickens and much too long to confine the old birds.

I hope the Committee may be induced to limit the days of exhibition to three, or at the most four, and I feel confident what they lose at the door will be more than equalled by the entry fees.—W. G. C.

ULVERSTON POULTRY SHOW.

THE seventh annual Exhibition of Poultry was held on Wednesday and Thursday last in the Victoria Concert Hall, a room in every respect most admirably adapted for a display of the sort being seen to the best advantage. There is good and equal light, good ventilation, and the attention of the Committee to feeding and cleanliness was everything that could be desired by the owners of the many valuable pens in the Show. In numerical quantity the pens considerably exceeded last year, and their excellent quality will be easily understood from a glance at the prize and commended list. On previous years the Committee of management have been complimented from various quarters on returning the birds from the Show in good order. This year we feel confident a like praise will be due.

Mr. Angus Sutherland, of Burnley, officiated as Judge. We understand it is his first season in that capacity; and from the generally satisfactory manner in which he discharged his arduous duties, we expect to see his name frequently in next year's poultry returns.

Amongst the varieties of the Show we noticed two pens in particular. One contained three remarkably fine specimens in good feather, and three-parts grown, of those shy wild Ducks the Shelldrake. Another contained a fine, large, full-grown hybrid between a Black Game hen and the Wild Pheasant.

In Class 1, Mr. Cannan, of Bradford, defeated the well-known Black Spanish of Mr. Teebay, and five others.

In *Dorkings*, Capt. Hornby easily defeated all competitors. Mr. W. Hill was second. In Black-breasted and other Red Game, Mr. Fletcher's birds, under the fostering care of Mr. Gilliver, secured first prize; Mr. T. Robinson pressing hard with a good pen. In Class 4, Duckwings and other Greys and Blues, Mr. Fletcher was again victorious with a capital Grey cock and two excellent hens; Mr. Joseph Hindson second. In Class 5, Any other variety of Game, Mr. Fletcher won with a splendid pen of Piles, about the best pen ever exhibited. The cock has won eighteen times without any defeat, and placed to the credit of his owner £64 in prizes. Mr. West had a capital pen of Piles for second. *Cochin-Chinas*, in Class 6, were a first-rate collection. After devoting particular attention, the card was up for Mr. Cannan; Mr. F. M. Hendle second. In Class 7, Golden-pencilled *Hamburgs*, Mr. Robinson, of Ulverston, was first with a beautiful pen, which had previously gained the cup at Kendal. Mr. Cannan was first in both Golden and Silver-spangled *Hamburgs*. In Class 11, *Polands*, Mr. Beldon was first and second. In Class 12, Any other distinct or cross breed, Mr. Lingard's Black *Hamburgs* bore away the prize in a good class of eleven competitors, including Mr. Teebay's pen of splendid *Brahmas*. In *Game Bantams*, Mr. Munn's beautiful pen defied all opposition, although seventeen others contended. A nice pen of Mr. Bayley's was second. In *Bantams*, Any other variety, Mr. Cannan was again in the ascendant, defeating Mr. Dixon and seven others.

In *Ducks*, Mr. Fowler was winner in the Aylesbury class, and Mr. T. Robinson in Rouens. A pen of Grey Call Ducks belonging to Mr. J. Dixon, was first in Ducks of Any other variety, and Mr. Earle's East Indian second.

In the *Game Cock* class, Mr. Fletcher was first with a noble-looking Black Red, winner of many prizes, and Mr. Boulton second with a Brown Red, which was third at Birmingham, first at Manchester, and third at Whitehaven. Mr. Fletcher was third, and Mr. Redhead fourth with a beautiful blood-like Black Red. In *Game Chickens* and two pullets, Mr. Grimshaw was first with a pen of capital birds; Mr. Fletcher second, and Mr. E. Aykroyd third.

In *Game Bantam Cocks* Mr. Bayley exhibited one of the most beautiful birds ever seen. Mr. C. B. Kennedy, of Ulverston, was second, and Mr. Fletcher third.

WHITEHAVEN CANARY, POULTRY, AND PIGEON SHOW.

FOR five years past a Poultry Exhibition has annually taken place at Whitehaven, under the management of a small but enthusiastic committee of local poultry-fanciers. At the outset the Exhibition was indeed a small one; but the originators, in no way foiled by the paucity of the entries, perseveringly pursued the same honourable and straightforward conduct that still marks all their proceedings, until their Meeting well deserves mention as one of the best to be visited in any of the northern counties. Even a cursory inspection of the printed catalogue will convince any one that the competition now embraces a very considerable proportion of our most noted breeders; and we may, for the information of our readers, preface our few observations on this year's Show by stating the entries were more than a hundred pens in advance of those of the year 1862.

We offer the Committee our hearty congratulations on their success, and hope that each succeeding year may still add notoriety to their well-merited position among our local exhibitions. The Refuge School, in which the Exhibition takes place, is exceedingly well situated for the accommodation of visitors, being actually in the public market-place, so that the Show necessarily becomes an annual treat not only to the actual residents of Whitehaven, but is generally so to the numbers who visit the town from many miles round for business purposes. The only drawback is, that some portions of the room are comparatively dark from want of a direct light into the pens; but this objection has been materially lessened by the application of temporary gaslights, while a little alteration in the disposition of the pens in future years will leave very little to be complained of on this score.

The first class was for Black-breasted and other Reds, *Game* fowls, and a capital competition ensued. Most unusually, the Black-breasted birds took all the premiums, and were shown in a tip-top condition most creditable to their respective owners. The Duckwings, though few in numbers, were very good; in fact, birds of this colour were more than generally good throughout the Whitehaven Show. In the *Game* class for Any other variety were shown a very good pen of the now-almost-extinct breed so well known in times past as Worcestershire Piles. In the days of the cock-pit they were notoriously the most indomitable of fighters, and the most lasting birds that could be placed on the turf, but perhaps not so quick fighters as some others, whilst their curiously-marked plumage gave but little hope to the inexperienced of their unvarying pluck; so much so that old cockfighters assert that not a single instance of cowardice could ever be pointed out in this almost-forgotten variety. A pen of uncommonly good White *Game* stood first, however, in this class, and Red Piles took second honours, the Worcestershire Piles having to remain content with a high commendation. The only class in which a falling-off appeared was the Black *Spanish*, and therefore we omit any further reference to them.

The whole class of *Dorkings* consisted of large and superior specimens, and it augurs well for the great improvement of late in White *Dorkings* to report that in such a competition a pen of this variety took second position against all comers.

In *Cochin* fowls, all colours competing, the Partridge birds were far in advance of the remainder, and were numerously exhibited; they thus, of course, cleared the prize list.

As a satire on the breed, we rather presume, a local competitor entered a very good pen of *Brahmas*. In this class they

remained unnoticed, though in the class for Any other variety of poultry they must have maintained an excellent position.

The *Hamburgs* were quite a befitting collection for the northern counties, where first-rate excellence is always anticipated. The hen in the first-prize pen of Golden-pencilled birds was undoubtedly one of the best ever yet exhibited. The Golden and Silver-spangled *Hamburgs* were far beyond mediocrity, but the Silver-pencilled were comparatively a failure.

The only *Polands* worthy of special note were the White-crested and the Golden-spangled.

The *Game Bantams* were, perhaps, one of the very best classes in the room, Duckwings, Black Reds, Brown Reds, Piles, and Birchen Greys being well shown; but it really was a misfortune for this truly pretty class—always, by-the-by, quite favourites with the public—to have to while away their confinement in one of the darkest positions in the show-room. A provision against this another year would certainly be an improvement. The Gold and Silver laced Bantams were also good. A decidedly good competition ensued in the Any other variety class for Bantams; so much so that thrice the number of prizes to be allotted could have been easily and deservedly distributed.

The Aylesbury *Ducks* fell short of the generally-accepted standard; but the Rouens made great amends for their shortcomings. Wild Ducks and Buenos Ayrean Ducks were shown in perfection.

We next come to the *Pigeon* classes, and never, perhaps, has a more meritorious collection, if limited to the same number of pens, been exhibited. The Carriers proved one of the strongest classes, the Dun birds taking the highest position, Blacks the second, whilst high commendation seemed on every hand called for. The Almonds were very good, and among the Baldheads were a pair of as perfect Reds as need be desired. The Trumpeters, particularly the White ones, and the Jacobins (in many varieties of colour) were so good that it was by no means a covetable task for any arbitrator to assign superiority. The Barbs, Turbits, and Owls were also of the highest character. In the class open to all other varieties of Pigeons were some extraordinary high-class Runts (Silver Duns), and some specially good Frillbacks. Altogether, the Pigeon classes were superior to any we have had the pleasure of inspecting for many months past.

As a fitting tailpiece to the Whitehaven Poultry Show came two Single *Game Cock* classes—the one for adults, the other for cockerels. To the latter, money prizes were the order of the day; to the old birds, a silver cup in addition. The competition in both classes was extreme, and representatives of every colour of *Game* fowls were competing. The winner of the silver cup was a magnificent Black-breasted Red belonging to Mr. C. W. Brierley, of Oakenrod Terrace, Rochdale, and which proved one of the most specially attractive objects on view. The covetous desires of on-lookers, however, were soon dissipated, on a reference to the catalogue, where his value was estimated by its fortunate owner at a cool £100, most probably to insure its safe return. Under this proviso, it was really amusing to witness how soon the ardour of anxious "claimants" evaporated. Many of the remaining birds were most excellent. In the Cockerel class, Mr. T. Robinson, of Poplar Grove, Ulverston, exhibited a Brown Red that will take a very great deal of beating before he can be surpassed if kept up to his present condition; for not only is he of faultless colour, but as perfect in the hand as could be wished for, and one of the hardest-feathered *Game* cockerels ever shown.

Before concluding we must make one observation as to the silver cup given to the best adult *Game* cock at the Whitehaven Show. It was really a good one and such as any winner might be proud of—a feature, we regret to say, by no means universal in the silver cups given to poultry of the present day. It was a honest representative of value; and if some few of our poultry committees will take down this gentle hint as a guide in their future distributions, we can confidently assure them it will add most materially to the popularity of their coming shows, for the present case stands out in pleasing contrast to the many instances that might be adduced of cups proving (when obtained), not worth one-fourth or even a sixth of their reputed value. The remedy is easy, and the line of conduct for the guidance of committees quite without dispute—viz., if silver cups are to be allotted, by all means let them be nearly approaching in value to the worth represented, or at least leave the winner the opportunity of receiving the money instead, under which arrangement no objection can reasonably ensue. It is not, in our opinion, a

legitimate source of revenue to any committee to limit the actual value of their silver cups to perchance but little, if any, more than a fourth of the sum stated, so that the fact stands out apparent, that the winner of the second prize has ultimately a decided advantage over his rival, by the personal purchase of a much-better-manufactured and more weighty cup with the proceeds of his second position on his return home, with, it may be also, a trifling overplus into the bargain. As such malarrangement absolutely stultifies the original intention of giving silver cups as first prizes at poultry shows, we again repeat, the Whitehaven Meeting has offered them a rule which is well worthy of their imitation on future occasions.

The part of the room appropriated to the exhibition of the Canaries and other singing birds, was well-stored with excellent specimens.

A list of the prizetakers appeared last week.

POINTS OF MALAYS.

IN your impression of the 24th ult., a correspondent, "Y. B. A. Z." in his "Dottings at Devizes" said, "Some Malays were there most conspicuous by their ugliness."

I am a Malay-breeder, and should have been glad if your correspondent had pointed out which were conspicuous, or whether all of them were not so. There are some persons who consider this class of fowls extremely ugly; I do not. I think as a class they are extremely beautiful; but after breeding them for twenty years, and having been successful at some shows, and unsuccessful at others, I have yet to learn the good points of a Malay, and what are its true characteristics.

I wish there were some settled point of eminence to which breeders could direct their attention. I never did, and I never shall, dispute the decision of judges; but I must say that I am puzzled to know what kind of birds to breed to insure success, for one judge decides to give a prize to one colour and form at one show, and another judge acts differently at another show, so that they appear to have no rule to go by, and "when doctors differ their patients suffer." Uniformity of character, therefore, seems to be required, and how is this to be arrived at? Perhaps you or your correspondent will kindly inform me through the medium of your Journal.—JOHN JAMES FOX, *Devizes*.

[We agree with you, we like Malays, and we have liked them for years—more than twenty. It is forty years since we first knew them. There are few judges of Malays in England. One of the best, if not the best, is Mr. Andrews, of Dorchester. We believe there has never been but one standard with that gentleman and those with whom he mostly acts. We will give our notion of what a Malay should be. The body should describe three bends or bows, one from the head to the shoulders, one from the shoulders to the rump, and the last from the rump to the end of the tail. A Malay should have a drooping tail. The comb should not be a pea comb, nor a lop comb, but a hard, rough-skinned one, flattened down on the head, and perfectly tight. The eyes should be bright and pearly. The throat bare, hackle very scanty; short, hard feathers on the breast dividing at the crop, which should be visible, naked, firm, and red. Scanty feather is a characteristic of the breed; the point of the wing at the side of the breast, and the higher joint of the same wing level with the back may both be bare. The wings should stand out from each side of the body plainly as if they were carved in hard wood. There is in a good and pure Malay no fluff, no plumage to hide shape, and, therefore, the body tapers to a point to the tail. The hip bones are plainly visible, and the strong, wide-apart legs, with round, hard thighs, and large but well-proportioned knees. They should be very hard in hand, and have little or no feather on the hinder parts of the body. There is no fixed colour for the legs or plumage.]

WARNING.

ALLOW me a few lines in your Journal to caution poultry and pigeon fanciers against lending money to a young man, who has been living on borrowed money and other nefarious means for some time back. He called upon me more than twelve months ago, but was evidently disappointed—he obtained nothing, but he has since revenged himself by making too free with my name in drawing money from others. His plan is to introduce him-

self as Mr. Shaw, of Stainland, where he finds I am not personally known to the parties, or as my brother if I am known; and thus by throwing people off their guard, succeeds in most instances in borrowing money under some frivolous pretext or other. He has in this way duped a great many fanciers out of sums varying from 5s. to 30s. each. I heard of him a few weeks ago borrowing money in my name in Manchester, and it is very probable he is the notorious Beewick Lodge correspondent.

If I remember rightly he is rather well built, and has reddish hair and whiskers. I shall be glad if this notice will be the means of stopping his supplies, and handing him over to the care of the police.—S. SHAW, *Stainland*.

SUPERPOSING IN STAFFORDSHIRE—SEASON IN RENFREWSHIRE.

THE following is in reply to the inquiry of "A NORTH-STAFFORDSHIRE BEE-KEEPER," in No. 99, page 144, as to his superposed hive. The division of a crown-board, with end openings only between two sections of a storified-hive, would, doubtless, to a certain extent, "affect their future welfare" by interrupting the queen's free progress through both, and thereby curtailing her production from what might otherwise be expected, were the entire combs as open to her perambulations as when there is the usual space between every bar. Then, although the stock ultimately attained an altitude of four or five instead of but "two storeys," such a height, rather than being a disadvantage, would give promise of weighty supers during a favourable season. As a general rule, the roomier the stock the longer is natural swarming protracted, although the swarm is all the larger when it comes.

Assuming from the description of your correspondent that the present upper portion of his superposed stock is but a cap, or small hive—in that case he might, the stock being strong, remove it filled as a super without materially retarding the swarming of the stock, should the summer be good; but as he seems desirous to increase his hives, perhaps the speediest mode to accomplish this would be, on the first appearance of drones, during the middle of a fine day, to attach the upper hive to an eke, and then invert the lower, beating up the queen, together with the bulk of the inmates, and remove it then—say a mile or so off for two or three weeks. The absent foragers, with those left in the lower hive, would in the interim raise a young queen.

The last year was quite as miserable a bee one in Renfrewshire as it could possibly be in Staffordshire. The season of 1860 was bad, 1861 worse, and 1862 the worst the present writer has any recollection of since he knew anything of bees and bee-keeping. Many he remembers as enthusiastic bee-keepers since his boyhood fed their stocks at the close of 1860, hopeful for 1861, fed again that season; but in disgust let them take their chance in 1862, trusting solely to the tolerably good month of August at the heather, and this spring finds them totally bankrupt in the bee way.

My own apiary at the beginning of last year consisted of six stocks—three weak, and three strong; and, anticipating a good season after two such poor ones, besides the arrival of a Ligurian stock from Devonshire, I kept my favourites in tolerable condition as the summer advanced by repeated drafts on the crushed-sugar cask, but unfortunately neither the good season nor the Ligurians arrived. I then turned my attention to equalise my stock; my three strong ones were by this time strong indeed, built out, quite at suffocating-point, but they thought better of it than swarm, and were consequently nearly idle.

To remedy this I began operations first on the strongest, in a Stewarton hive and eke wrought on the adapter plan, which I will now describe as No. 1, beat out the inmates into a similar hive and eke; and, with the assistance of a little feeding now and then, they, by the end of the season, had filled their new hive with comb. Into their vacated hive I placed an unusually-prolific queen, the monarch of another Stewarton-adapter which had met with a misfortune and was now rated as one of my weak ones. Her subjects speedily hatched-out the large quantity of maturing brood this hive contained, and were so reinforced in consequence, that in the end No. 2 was, if anything, superior to No. 1. The combs left by No. 2 I set in frames, and I placed them, alternately with blank ones, in an empty box under No. 3, a strong stock in a frame-hive: this gave them plenty of fresh air and employment in completing the frames in their lower hive.

No. 4 was a very weak colony in a straw hive with an agile dark queen, but with by far too small a population ever to prosper in so large a domicile. I therefore picked out four frames well stored with brood and food borrowed from No. 5, and placed them in a frame-hive with temporary contracted moveable ends, into which I transferred her and her attendants. So delighted were they with the change, that from being a peculiarly inert helpless squad they were transformed into the pluckiest little colony in the lot, improving to the utmost every favourable blink. The combs of their old straw hive were cut up to partially furnish a lower box for No. 5, which, by the way, was a particularly good colony, shifted from a nine-inch-deep bar-hive into a frame one. To the beautifully-loaded tops of their bars we were indebted for the only remembrance of a honey-harvest obtained. No. 6 was a weak colony in a frame-hive, reinvigorated by a contribution of three heavy frames levied from the strong stocks.

After a large and final draft on the cask, I set my half-dozen stocks fast on their ekes for the winter, thankful that the disastrous season of 1862 had passed, leaving my industrious little friends, although not an augmented, still not a diminished, band, and in better trim to begin the campaign of 1863 than 1862 had found them. That campaign opened I may say on the 31st of January, such a day as your esteemed correspondent, "A DEVONSHIRE BEE-KEEPER" described the 29th to have been with him, when I had the pleasure of seeing the first indications of pollen-carrying, only two days later than with his beautiful Italians in salubrious Devonshire. They have lately embraced every favourable moment in this unusually mild spring to rifle the aconites and crocuses now in bloom. This, however, will have no effect in tempting their master to deviate from his usual course of increasing the temperature one whit till March has fairly lost her "adder head," and displays the departing azure brilliancy of her "peacock's tail" when, by withdrawing the ventilating ekes, and administering small doses of food, each stock will be put upon its mettle.—A RENFREWSHIRE BEE-KEEPER.

DRONES IN MARCH.

OUT of a Ligurian hive to-day (3rd March), which is very warm, I saw two drones come. The hive was populous last year, and was the only one that swarmed (it swarmed twice). But misfortune overtook it on the moors, for it came back populous but devoid of honey. I have fed it by bottle all the winter, and this day, the first warm one (out of the sun), they have taken their first spring flight. I observe that they have pulled out many immature bees, as far as I can see, not drones, which proves that breeding has been going on, and that there is the possibility of a queen existing. Whether it is only the comparatively common occurrence of a hive deprived of its queen, and of working bees breeding, I know not; but the existence of drones on the 3rd of March is worthy of note.—A NORTHERN BEE-KEEPER.

[Setting aside the possibility of a drone-breeding queen or of fertile workers as anticipated by "A NORTHERN BEE-KEEPER," either of which circumstances if they exist, will probably soon make themselves sufficiently evident by the undue development of the male element in the hive; there is yet another contingency which will account for the occasional appearance of a few drones in March. This is the irregular deposit of isolated drone eggs amongst those of workers, which sometimes occurs, and of which I saw an instance only a few days ago in one of my own stocks. In the middle of a patch of sealed worker-brood projected the unmistakable hemispherical cover of a drone larva which has probably arrived at maturity, and may even have taken its first flight before these pages are printed.—A DEVONSHIRE BEE-KEEPER.]

MEETING OF GERMAN BEE-KEEPERS AT POTSDAM.

THE bee-keepers of Germany held their tenth annual meeting at Potsdam, on the 17th, 18th, and 19th of September last. Here were met the most distinguished "bee-fathers" of Vaterland, the illustrious Dzierzon and his nephew, who is stated to be a worthy follower in his uncle's footsteps, Baron von Berlepsch, Count Stosch, Pastor Kleine, and a host of others more or less distinguished, to the number of from 500 to 600.

The following is an epitome of the subjects brought under discussion.

I. *What are the results of experience with regard to the advantages and disadvantages of the Italian bee?*

Herr Radlow who was the originator of this inquiry, stated that he had himself but little experience with the Italians, and he therefore requested Pastor Dzierzon to enlighten them on the subject.

Pfarrer Dzierzon in reply said, "When ten years ago I received the first Italian stock, multifarious opinions were promulgated concerning them. Some said the Italian bees were nothing but German bees in a coloured dress, they were merely a climatic variety, and in our climate would soon degenerate into the common grey or black bee. This opinion has not, however, been confirmed. The Italian bee is a distinct species, which is not only of a different colour, but has also other great peculiarities which have since come to light, especially during the past year. The Italian bee is decidedly more diligent and richer in honey. When I examined my hives in the beginning of last August, what a striking difference was there to be seen between the Italian and the black bee! Unfavourable as this season has been, the Italians had generally much more honey, but on the average fewer bees. The Italians begin breeding earlier and cease earlier than the black bees. Being more diligent and intrusive, they wear themselves out more rapidly, and therefore a greater mortality must be the result. Towards autumn, however, it must at all events be agreeable to bee-keepers to find more honey than bees, whilst as greater diligence must naturally produce a greater result, they are decidedly better honey-gatherers. That the Italian bee is less inclined to sting is undisputed; and this is a great advantage, since the bee-sting is very formidable to some, whilst in most a degree of swelling is produced which is very disagreeable to clergymen, teachers, and others who have to appear in public. Then the Italian bee is more watchful, and will not submit to be robbed by others like the common species. Even the weakest stock, if it has a queen, will repel courageously the most violent attacks from strangers—at least it is so with me; for though I am frequently obliged to operate in the robbing season, not one Italian stock has been plundered. My conviction is that these advantages are of such importance, that it is well worth while to bestow both care and attention on the introduction and multiplication of the Italian race" (cheers).

Herr Gotze declared the Italians had many advantages, but no disadvantages. Passing through a teazel field in full bloom after seven o'clock in the evening he was surprised to find a number of bees still working zealously. A close examination proved them to be all Italians, not a single German bee could be found among them. The flight continued until eight o'clock.

Pastor Kleine declared the superiority of the Italian species to be beyond a doubt. It had also been of great value in deciding debatable points, such as the intercourse between the sexes taking place outside the hive, and but once during the life of a queen—the doctrine of parthenogenesis, which has been of so great importance in physiology—the turning-out of fertile workers being an indispensable element in every normal hive—the discovery of the mode of life and duties of young bees—and the longevity of workers. He also considered that bee-keeping in order to prosper should be a favourite occupation. Every one who has introduced Italian bees into his apiary must confess that his love for bees has been increased, and that by their means he has become rapidly initiated into the mysteries of bee life (applause).

Herr Harmuth declared his preference for the hybrid race, stating that the true Italian bee neglects the heath.

Pastor Kleine, on the contrary, averred that the Italians seemed to riot in the blossoms of the Lüneburg heath.

II. *How may water-dearth* be discovered, what are its consequences, and how can it best be prevented?*

Count Stosch recommended the honey-room being on the same level as the brood-room, avoiding the use of too thick as well as stuffed double walls, but giving the bees water in a sponge.

Pastor Dzierzon agreed with the former speaker, recommending also a supply of water outside the hives in vessels covered with moss, and keeping the floor-boards cool in order to promote condensation upon them.—A DEVONSHIRE BEE-KEEPER.

(To be continued.)

* Water-dearth is an evil which is, so far as we are aware, unknown in England, and appears to owe its existence to the extreme dryness of the atmosphere in Germany.

SALT NOT BENEFICIAL TO PIGS.

I HAVE had to do with pigs more or less for fully forty years, and for the last twenty-five years have bred and fed not a few for my own consumption, and to sell to private families. I have read everything I could find about the management of pigs, and tried many sorts of food and different ways of feeding. Amongst others I have tried salt, although I had seen its injurious effects as I have stated at page 753, in the volume just concluded.

It will be remembered, that in Vol. XXVI., page 188, there is a paper read by Mr. Stearn, of Brandeston, Suffolk, on the management, breeding, and feeding of pigs, and to my mind he is the best authority on the subject I am acquainted with. He sprinkles salt on the food for his young pigs, and it may seem in the opinion of some to be rather daring to condemn salt in the face of such an authority: yet I do, and I will endeavour to make it appear why in as clear a way as I can.

In the first place, I am quite aware that to salt a pig's food as a man would salt his own porridge will do a pig no harm when the pig has become used to it; but the question is, Does it do him any good? I say it does not, so far as my experience goes; and in the next place I have had plenty of proof on several occasions of the injurious effects that brine has had on pigs when thrown in the swill-tub, even when there has been no saltpetre in it.

As regards boiled potatoes salted down in large quantities to be used as wanted, which was, I suspect, what Mr. Pearson did, and which was the case with the potatoes and pigs referred to at page 753, I will show from experience that the same quantity of salt given to a pig—that is, sprinkled over his food at the time of feeding and mixed up with it—which would do him neither good nor harm then, would do him a serious injury if mixed in the same proportions and put two or three hogsheads of it together, and allowed to stand a month or two before being used.

In 1855 I had a quantity of bad potatoes; and knowing if I did not boil them all up at once I should lose a great bulk of food, knowing also that salt does not make pigs ill if given as above stated, and thinking that others had been too bountiful in the use of it, I determined to try an experiment for myself, but at the same time had no faith whatever in the good effects of salt.

I have a tub that measures 3 feet 9 inches at bottom, 4 feet 9 inches at top, and 3 feet deep; and as it was the first week in August and I did not want to begin feeding my pigs till the first week in October, I determined to fill the tub with potatoes, and salt them down as I term it. First, I put potatoes in when boiled, and smashed them till they were 1 foot up the tub and quite solid and level on the surface. I then sprinkled salt all over the surface. I next smashed in another tub, and filled into the large one 1 foot more, with salt as before; then another layer 1 foot thick, likewise with salt, and that filled the tub. I put no more salt, according to the quantity of potatoes, than I should have put on potatoes that I was going to eat myself, and, consequently, no more than might have been put in a pig's meal at the time of feeding, and given without any ill effects.

When I had used up all the offal I had in the shape of brewers' grains and refuse from the kitchen and garden, the salted potatoes had then stood two months, and my pigs were about 11 score a-piece and half fat. I then began giving those salted potatoes mixed with beanmeal. I dug the potatoes out of the tub with a spade, into a bucket, then put to them the beanmeal and as much water as made the whole about the consistency that a bricklayer would use his mortar. This was given to the pigs, and all went on well enough to outward appearance; still I thought they did not eat their food with that relish they used to do. Neither could I see that they went on any better than my pigs used to do with the same food without salt; but nothing happened till they had eaten about halfway down the tub, then came the grand secret.

I fed as usual at night. I put the food over the wall into the trough; it was dusk, and as I was not aware of anything amiss I did not go again till breakfast-time next morning, and then to see my pigs in the same plight that I had seen other folks' from the same cause! They had not eaten all their supper, and there they were scouring all up the walls and about the sty, opening their mouths as wide as they could, then champing their jaws together, then gaping again, then champing, which told me they were sick at stomach. I knew at once what was the cause, and the effect was plain enough, and all I had to do was to remedy the evil in the quickest and best way I could.

As soon as I had time I examined the potatoes that were left in the tub, and the place I had taken out their allowance was

filled up with stuff in a liquid state. I tasted it, likewise put some potatoes in my mouth and chewed them. Both were alike of a nasty brackish taste, a good deal like the mineral water I have tasted either at Brighton or Malvern, but forget which, or like water that a lot of rusty old iron had lain in for some time. It did not taste as salted porridge would, and it is fresh in my memory to this moment. I dug down to the bottom of the tub, turned it over, and found the potatoes the same throughout. It is natural to suppose if there had been no salt used that the potatoes at the bottom of the tub would have been more moist than at the top, after standing so long; and my humble opinion is, that the salt put on the top when the tub was full, gradually settled down with the moisture that the potatoes contained, and took the second lot of salt with it about 6 inches lower than where it was put, and that, with the next lot of salt and the moisture from the potatoes, had formed brine enough to well saturate the potatoes for about 18 inches from the bottom of the tub. I am satisfied that brine either from animal or vegetable substances, is injurious, if not poison, to pigs, and it is probable that if my pigs had been strong stores just brought in from where they had not been half fed, and eaten eagerly, as they would have done, to their fill, it would have killed them outright. I think it will be seen that salt acts quite differently when used in different ways, and why, I will leave wiser heads than mine to determine.

Now for Mr. Pearson's question, why I think salt is not good for a pig, if it does him no particular harm; and the reason is, because it is not in the nature of a pig to eat or lick salt with his own free will like sheep or cattle, whenever they come in contact with it. Between the years 1845 and 1855 I lived for five years near some saltworks in Worcestershire, and on the premises there had been some new buildings put up, and at certain times of the year the face of the bricks for 2 feet or so from the ground would be incrustated all over and quite white with salt. Whenever the sheep or cattle came into the field adjoining these walls they would at once begin licking this salt off, and although we had in general from fifteen to fifty pigs that were at liberty to do the same, I never saw one do it. Again: The canal came through our fields, and at the locks the salt-boats would often stop and put out lots of salt to alter the arrangement of their cargo, and to stow away the fresh meat for their voyage; consequently, there were often lots of salt strewn on the large stones that were round the locks, and I have seen the sheep and cattle go and lick all the salt up as clean as if it had been washed off; but the pigs had the run of the same fields, and I have watched their proceedings, and they would walk over these stones without taking the slightest notice of the salt. I should have stated, that the pigs would rub themselves against the above-mentioned wall without notice of the salt, and I venture to say that pigs, dogs, poultry, and ferrets will thrive without salt.—WORCESTER.

OUR LETTER BOX.

BLACK BANTAMS' COMBS (J. L.).—There is no fixed comb for a Black Bantam. It may be double, or single, or cupped. The latter would be no proof of impurity, because wherever there are single there will sometimes be cupped combs. It is a very common thing for the Sebrights to show all sorts of combs. We have seen them so curious as to be ridiculous, and look more like a thing made in sport than a production of Nature. A cupped-comb is not desirable, nor would the possessor of it be likely to be a prize-taker.

BRAHMA POOTRAS.—We are informed that letters directed to Mr. Hargreaves, Bacup, Lancashire, have been returned from the dead-letter office.

COVERING BEE-HIVES (Mr. J. Penn).—Covering them with stable litter, as recommended by Mr. Payne in "Bee-keeping for the Many," is an experiment which we have never tried, but we should say, Keep them covered until the nights cease to be cold, or until the bees become sufficiently numerous to set the cold at defiance.

VENTILATION.—WINTERING BEES IN GLASS HIVES (B. W.).—If you will peruse my communication in pages 159 and 160, I think you will find it sufficiently explicit. My mode of ventilation is, however, inapplicable to bar-and-slide hives. Perhaps the best plan with these hives would be to draw out one or two slides on each side, and cover the apertures with perforated zinc. I never attempt to winter bees in glass hives, but always shift them in the autumn into wooden boxes. The late Dr. Bevan informed me that he once succeeded in keeping bees alive through the winter in a unicomb-hive, which was placed in his drawing-room, and well protected by woollen wrappers.—A DEVONSHIRE BEE-KEEPER.

WORK ON BEES (An Old-fashioned Bee-keeper).—If you will send to our office five postage stamps, with your direction, and ordering "Bee-keeping," you will have it free by post, and it contains what you require.

LOSS OF HAIR ON DOGS (L. C.).—Your hairless two-year-old Toy Terrier, descended from a blue tan grand sire similarly bare, probably never will have any hair. The ointment we mentioned last week would not injure your dog, just enough to grease the surface being used at a time; but we can hold out no hope of its producing a crop of hair.

WEEKLY CALENDAR.

Day of Mnth	Day of Week.	MARCH 17—23, 1863.	WEATHER NEAR LONDON IN 1862.							Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon Rises and Sets			
				degrees.			m. h.	m. h.	m. h.		m. s.	
17	Tu	Sir J. E. Smith died, 1828. B.	29.746—29.730	45—35	S.	0.21	13 af 6	5 af 6	51 4	27	8 36	76
18	W	PRINCESS LOUISA BORN, 1848.	29.763—29.671	49—25	S.W.	—	10 6	7 6	14 5	28	8 18	77
19	Th	White Poplar flowers.	29.608—29.495	53—35	N.E.	0.02	8 6	8 6	sets	28	8 0	78
20	F	Sun's declin. 0° 14' s.	29.416—29.316	39—30	N.E.	1.11	6 6	10 6	44 a. 7	1	7 43	79
21	S	Jethro Tull died, 1740.	29.678—29.372	43—32	N.	0.07	4 6	12 6	58 8	2	7 25	80
22	SUN	5 SUNDAY IN LENT.	29.979—29.921	44—31	N.E.	0.14	1 6	13 6	9 19	3	7 6	81
23	M	Frankenius died, 1661. B.	29.817—29.517	44—34	S.E.	0.42	59 5	15 6	16 11	4	6 48	82

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 50.9° and 33.9° respectively. The greatest heat, 67°, occurred on the 19th and 20th, in 1836; and the lowest cold, 17°, on the 20th, in 1845. During the period 156 days were fine, and on 96 rain fell.

THE PROGRESS OF FLOWER-GARDENING.



in nearly every parish around cities and towns, such flowers must have been in high repute. It appears that they were not only cultivated for exhibition, but also for planting in the beds and borders of the flower garden.

I can well recollect the fine display that I have seen many years ago, when the beds were filled with Crocuses, Anemones, Hepaticas, Auriculas, Hyacinths, Tulips, Cowslips, Ranunculuses, Narcissi, Ixias, Gladioli, Polyanthes, Carnations, Pinks, Lilies, Double Rockets, &c. Herbaceous plants were also of some service to give variety to the beds and borders, and when annuals were introduced, more especially the sorts sent home by Douglas, they combined to produce a pleasing but transitory effect.

Abercrombie, Nicol, and other practical gardeners of their time, seem by their writings to have had no distinct ideas on the subject of arranging flowers in flower gardens. However, Nicol in his "Gardeners' Kalendar," published in 1810, gives the following instructions on the formation of gardens—"A variety of forms may be indulged in without incurring censure, provided the figures be graceful, and not in any one place too complicated. An oval is a figure that generally pleases, on account of the continuity of its outlines. Next, if extensive, a circle. Next, perhaps, a segment in form of a half moon, or the larger segment of an oval. But hearts, diamonds, triangles, or squares, if small, seldom please. A simple parallelogram, divided into beds running lengthwise, or the larger segment of an oval, with beds running parallel to its outer margin, will also please."

The following observations made by a lady, authoress of the "Florists' Manual," published in 1806, are the first indications that I have found worthy of particular notice, as they attest, to my apprehension, the first approach to a correct taste in the arrangement of flowers. "In the formation of that assemblage of flowers which may be distinguished by the term of the mingled flower garden, it is essential that the separate parts should, in

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their appearance, constitute a whole, and this appearance is not incompatible with any form into which the ground may be thrown, if attention be given to the manner of planting. In some gardens this appearance of a whole is entirely destroyed by the injudicious taste of setting apart distinct borders for Pinks, Hepaticas, Primulas, or any other favourite kinds of flowers; also for different species of bulbs, as Anemones, Ranunculuses, Hyacinths, &c., these distinct borders, although beautiful in themselves, break the whole, that should always be presented to the eye by the mingled flower garden, as single beds containing one species only form a blank before that species produces its flowers, and a mass of decaying leaves when the glow of their petals is no more. The reverse of this mode of planting is essential to the perfection of the mingled flower garden, in each border of which there should be at least two of every species, but the precise number must be regulated by the force of colour displayed by the plants, and the size and relative positions of the borders. It will be only necessary to observe, that to whatever view the garden presents itself, the eye should not be checked by the failure in any part of it, of the prevalent colours of the season."

I think Mr. Hogg, who was master of an academy at Paddington, Middlesex, was the first writer to give us some ideas on the arrangement of colours. In his "Treatise on Flowers," published in 1812, he says—"We are apt to ridicule the Dutchman, as well as the imitators of him here at home, who divide their gardens into small beds or compartments, planting each with separate and distinct flowers. We ridicule the plan because it exhibits too great a sameness and formality, like unto the nosegay that is composed of one sort of flowers only; however sweet and beautiful they may be, they lose the power to please, because they want variety. It must, undoubtedly, be acknowledged that a parterre, no matter in what form, whether circular or square, elliptical or oblong, when all the shrubs, plants, and flowers in it, like the flowers of a tastefully arranged bouquet, are variously disposed in neat and regulated order, according to their height and colour, is a delightful spectacle, and worthy of general imitation. Yet, still, in some particular cases, I am disposed to copy the Dutchman, and I would have my bed of Hyacinths distinct, my Tulips distinct, my Anemones, my Ranunculuses, my Pinks, my Carnations, distinct, and even my beds of Hollyhocks, double blue Violets, and dwarf Larkspurs, distinct, to say nothing of hedgerows of different sorts of Roses. Independent of the less trouble you have in cultivating them when kept separate, you have beauty in masses, and you have likewise their fragrance and perfume so concentrated, that they are not lost in air, but powerfully inhaled when you approach them. Mrs. Siddons, the celebrated tragic actress, is a great admirer of this mode of planting, and fond of contemplating their beauty in masses. She adopted this style of gardening at her late residence on the Harrow Road. Her favourite flower was the Viola amena, the common purple Heartsease, and this she set with unsparing profusion all around her garden."

No. 755.—VOL. XXIX., OLD SERIES.

I also think that the taste displayed by Mrs. Siddons in the arrangement of her evergreens, to give a cheerful appearance to her suburban villa during the winter months, is worthy of notice. It was planted with Box trees, Fir, Privet, Phillyrea, *Arbor Vitæ*, Holly, Cypress, the Red Cedar, Laurel, Irish Ivy, Bay trees, *Laurustinus*, *Arbutus*, Spurge Laurel, &c. After the display of flowers was over, it was, no doubt, viewed with a degree of satisfaction, as giving rise to a pleasing association of ideas, in beholding their green verdure at a time when deciduous trees were stripped bare.

Mr. Loudon, in his descriptive notice of the gardens of the Misses Garnier, at Wickham, near Fareham, in the "Gardener's Magazine" of May, 1834, tells us that the bold masses of brilliant-coloured flowers and the succession of masses of flowers, with their intervening glades of turf, extending to a considerable distance till the colours were almost lost in the boundary plantation, produced a landscape of the most brilliant kind. When we look closely into the ground-plan of that garden, and examine the details, we find that beauty in masses is the predominant feature, combined with a smaller portion of the mixed system. There are beds of herbaceous plants distinct; Perpetual Roses distinct; Roses edged with Pansies; *Potentillas* and *Calceolarias* edged with *Viola cornuta*; *Hollyhocks* edged with *China Roses*; beds of *Pinks*, *Pelargoniums*, and *Verbena chamædrifolia*; a collection of *Phloxes*; *Fuchsia carnea* edged with *Lobelia triguetra*; *Lupines*, *Hydrangeas*, *Petunias*, *Mimulus*, and *Pæonies* distinct. We also find that there were only *Verbenas chamædrifolia*, *pulchella*, *Lamberti*, *Aubletii*, and *venosa*, and *Geraniums sanguineum*, *Lancastriense*, *sibiricum*, and *Wallichianum*, which are very old and inconspicuous sorts when compared with the variety and brilliancy of the sorts now in general cultivation. We are directed by Mr. Loudon to the Rev. Thomas Garnier, at Bishopstoke; to Mrs. Corrie, near Birmingham; to Mrs. Robert Phillips, near Cheadle; to Lady Broughton, near Chester; and to Mrs. Starkey, at Bowness, as the most distinguished places where the beds were most judiciously planted, and the order and keeping of the whole were of the very highest and most refined description.

Hay, "On Colours," tells us that all know that the arrangement of notes in a melody is regulated by fixed laws, proved also by the natural philosopher to depend on certain phenomena in nature, and which cannot be deviated from without giving offence to the ear: therefore a knowledge of these laws is considered absolutely requisite to every one who wishes to cultivate that pleasing art. This is precisely the case in regard to colouring; for it does not matter under what circumstances a variety of colours is presented to the eye; if they be harmoniously arranged the effect will be as agreeable to that organ as harmonious music is to the ear, but if not so arranged, the effect on the eye must be unpleasant, and the more cultivated the mind of the individual the more annoying will such discordance be.

On the harmony of colours he says, "If we look steadily for a considerable time upon a spot of any given colour placed on a white or black ground, it will appear surrounded by a border of another colour; and this colour will uniformly be found to be that which makes up the triad, for if the spot be red the border will be green, which is composed of blue and yellow; if blue the border will be orange, composed of yellow and red; if yellow the border will be purple, making in all cases a triunity of the three primary colours—red, blue, and yellow, the three simple or homogenous colours, of which all others are compounds. This analogy will help to show that the laws which govern colour are as irrefragable, and at the same time as practically necessary to the colourist in art, manufacture, or decoration, and, I would add, to the gardener, as those which govern sound are to the musician." Also, from the combination of the primary colours the secondary arise, and are orange, which is composed of yellow and red in the proportion of 3 and 5; purple, which is composed of yellow and blue in the proportion of 5 and 8; and green, composed of yellow and blue in the proportion of 3 and 8.

Contrasting Colours.—Yellow, its contrasting colour is purple; orange, its contrasting colour is blue. Orange is the extreme point of warmth in colouring, as blue is of coldness. Red, its contrasting colour is green. Red is decidedly a warm colour. Purple is rather a cool colour, and very retiring in effect. Blue is the only absolutely cool colour; the contrasting colour to blue is the secondary orange. Each of these colours is capable of forming a key for an arrangement to which all the other colours must refer subordinately. This reference and subordi-

nation to one particular colour, as is the case in regard to the key-note in musical composition, gives a character to the whole. The succession of colours in the key are yellow, orange, red, purple, blue, neutral, green. The diagrams given are also worthy of particular notice as showing a series of hues for each of the primaries.

The true knowledge of colour is not to be acquired by theory; some people have a false taste, some a false perception, which is otherwise called "colour-blindness." A true perception is a natural gift, like an ear for music, and it may be cultivated, but cannot be acquired. To attempt to find the reasons why one colour harmonises with another is futile until we have obtained a full empirical generalisation.

The last and best work on colours is by Sir J. G. Wilkinson, published in 1858. The following paragraph is valuable as a guide in our arrangement of colours in the flower garden:—"Colours are opposed to each other in different degrees. 1st, The strongest opposition is by positive contrast where the colours are of different hues and natures—as black and white, blue and orange, scarlet and blue, &c. Of these Mr. Field says, 'The only two contrasting colours which are of equal powers are black and white, orange and blue; and all other contrasts are perfect only when one of the antagonistic colours predominates. 2nd, Opposition or contrast of warm and cold colours; among the former of which are red, yellow, orange, brown, red-purple, &c.; among the latter blue, grey, green, purple, white, blue-black, &c. 3rd, Opposition or contrast of dark and light colours, or opposition of tones, as where the colours are tones of the same hue, one stronger than the other—as dark and light yellow. 4th, Opposition or contrast of accidental colours is where a colour and its accidental companion are opposed to each other—as red and green, blue and orange, yellow and purple.'"

From the attention that is now given to ornamentation in the arts and manufactures, and to a general diffusion of taste among all classes, we may soon expect to see the whimsical combination and the indiscriminate and incongruous mixture of colours, as at present very generally adopted in flower gardens, superseded by arrangements more in accordance with the true principles of taste. From the innumerable varieties of seedlings that are yearly raised with all the colours of the rainbow we can select the most suitable colours, and blend, shade, or contrast them as our taste becomes more cultivated. We must also bear in mind when arranging the colours in the flower garden that red and blue, which if mixed would form purple, become at a distance somehow fused by the eye into that colour, and that yellow placed next to red produces upon the retina the effect of an orange hue. But blue and yellow in juxtaposition do not produce green, or, if at all, to much less extent than the analogous secondary colours. Green has another peculiarity—that a certain quantity of it appears to be greater than the same quantity of other colours, and, consequently, a very small quantity of it will brighten-up a design. W. KEANE.

MANAGEMENT OF APRICOT TREES.

IN your No. 101 I felt much interested when I read the above heading, and I at once read through the three columns written by Mr. Robson. I quite hoped to have found some new method of insuring a crop of Apricots; but I cannot say that I found what I wished for. Still Mr. Robson is voluminous, and tells us that he believes the native country of the Apricot to be the southern shores of the Black Sea; that the Apricot attains the proportions of a fair-sized timber tree in Armenia (well, well, this is surely not far from the southern shores of the said sea); that the air of high regions is good for the Apricot; and that we have no mode of imitating this highly rarefied air; that the cause of our want of success is thus revealed; that "soil has no little influence over success;" that he is not quite certain he is right in supposing some of the old sorts are worn out, such as the Moorpark and the Peach Apricot, perhaps the oldest of all except the "Kill-John" of Africa (the Red Masculine).

Now, all this is interesting, I daresay, to many of your readers; but I confess I looked for some useful hints as to the "management" of Apricot trees, and also a full account of the districts in England where the Apricot tree is found trained against almost every cottage, helping to pay the rent; as Mr. Robson is, of course, a travelled man, for no writer on gardening should be a stay-at-home, I repeat I expected this from him.

As to the soils which Apricot trees seem to flourish in, they vary to a great extent. In Oxfordshire, where they are *par excellence* the cottager's tree, I think the district in which they are so numerous is oolitic. In Nottinghamshire, around Nottingham, I am inclined to think the soil is a stiff alluvial loam, but Mr. Pearson will tell us. In Suffolk, more particularly around Bury St. Edmunds, the surface is light, the subsoil mostly chalk; yet here Apricot trees flourish and bear abundance of fine fruit when trained against walls with south or south-eastern aspects. It is remarkable that in many gardens in the neighbourhood of Bury you may hear the gardeners say, "It is of no use to plant Peach trees here, they will not grow; but Apricot trees, as you may see, do well;" the soil of such gardens being a dark-coloured mould, very light and friable on the surface, and chalk and flints below.

Well, as Mr. Robson has written sixteen long paragraphs about Apricot trees, and has omitted to tell us many things, I will humbly attempt to give your readers a few hints taken from my own observation.

1. While Apricots against walls are in bloom, and the weather clear and sunny with sharp frosts at night, cover the trees every night with straw mats, or canvas, or some material capable of resisting frost to a certain extent. If the weather be dry the blossoms will take no harm, even if the temperature of the surface of the wall be as low as 27°. At 9 A.M. remove every covering, and never fail in doing so.

2. Never place any covering over the trees either by night or day if the weather be mild. Avoid all branches of evergreens as "protectors." If too thin, they are of no use; and if too thick, they will create stagnant air and destroy the blossoms.

3. As soon as the fruit is set and about the size of small horse beans, they are, if possible, more liable to injury from frost than the blossoms, and must be protected on frosty nights, but not in mild weather.

And now allow me to say why I have given the above hints. For twelve years I have cultivated Apricots in orchard-houses, and till last year my principal trouble has been the thinning of the fruit. During this period I have always observed the anthers disinclined to shed their pollen unless the weather was bright with a cold dry wind, our usual spring weather, thus showing that moist stagnant air was unfavourable to their performing their office. I particularly observed this last spring; the pollen was never dry and dusty as it should be, but remained on the anthers in almost a glutinous state. My Apricot trees in my orchard-house have been in bloom for more than a week, but till the 4th inst. the anthers did not open kindly. The bright sun and drying wind of yesterday (the 5th), however, settled the matter, and the pollen flew off in little clouds of yellow dust—a sure sign that Nature was fulfilling her office. My orchard-house, in which the Apricot trees stand, has been open night and day in spite of slight frosts for the last fortnight.

Mr. Robson "has but little hopes" of the Apricot as a house fruit. He saw it in 1829, and "that was a failure;" let him come here and see what a decent amount of intelligence and attention to the laws of Nature can do. My trees, with their roots "cramped-up" in pots, are as sturdy as oaks; and some of them, now from ten to twelve years old, have thick stems and sturdy heads, with short, well-ripened shoots literally covered with blossoms. Apricot trees planted out in orchard-houses do not come into bearing so quickly as potted trees. They are apt to grow too freely for some years; but I have some that are now eight or ten years old that bear profusely. In pots trees only 9 inches high will give fruit, and when pinched-in they are beautiful miniature trees.

Lord Elgin, just after his return from Japan, happened to pay me a visit when these little Apricot and Peach trees in six-inch pots were in full bloom. He at once said, "Why, how did you manage to import them in such good order from such a distance as China or Japan, where, only, I have seen such trees?" I soon made him aware that they were of home manufacture. No Apricot from a wall can be compared to the same fruit from an orchard-house. In the town gardens at Cheltenham I have seen Moorpark Apricots, from a standard, of very good quality; but waiting for a crop year after year is disheartening, hopeless work. Here, in a stiff loamy soil, I had at one time a standard Breda Apricot growing: its branches spread over many square yards of ground, and its trunk was several feet in girth. An Apple tree of the same size would have borne twenty or more bushels of Apples. Well, once in seven years it gave a crop of several bushels, which, if the summer were very warm, would ripen so

as to be fit for a schoolboy to eat. In the intermediate years a few were occasionally to be seen on it; and so, tired of the tree, I cut it down.

As to planting an Apricot tree against a north wall with the hope of eating ripe fruit from it, you might as well expect ripe Pine Apples from the open air in Kent. There is no wearing-out of old sorts of Apricots. The Peach Apricot, the finest and oldest sort cultivated in France, is now planted there to a greater extent than ever; and, as I learned from a French orchardist from the south, thousands of trees are planted annually to supply the markets, not as standards as formerly, but as "cordons" or close pyramids, the shoots being pinched-in in summer.

Mr. Robson recently has had a fling at orchard-houses, I may say as usual. Now, unlike your amusing and instructive contributor, Mr. Fish, I firmly believe he has never tried to manage an orchard-house. If he has, and has failed—well, the less he says about them the better. Let him come here and see, and I will endeavour to in-sense him, as Paddy says, as to the management and advantages of orchard-houses.—THOM. RIVERS.

THE ROYAL HORTICULTURAL SOCIETY'S KENSINGTON GARDEN.

It is impossible to please every one, and this is more especially true in matters of taste, such as ornamental gardening is. No work of man's hands is perfect—there is none such in which some fault cannot be found. No sooner is a work completed than suggestion after suggestion is offered as to how it may be improved. Where improvement is really the object in view these suggestions are not only welcome but oftentimes valuable, yet too often they are made with merely the desire of gratifying individual crotchets; and of both classes of suggestions this Society has had a full share. Some critics, regardless of cost, would have the Society's new garden gay with flowering plants at all seasons of the year; others, without reference to time, would have the garden planted with stately trees and luxuriant shrubs; and a third party would direct the funds of the Society to objects purely useful. All are right to a certain extent.

The purpose for which this Society was originally instituted was "the advancement of horticulture in all its branches, ornamental as well as useful." This should never be lost sight of; for it is a great point for any man, or body of men, to have a settled object; and the attainment of that, if steadily pursued, is not easy is at least probable.

To the Kensington garden belongs the ornamental; to the Chiswick garden the useful; but of the former it is now our business to speak. Both are under the management of Mr. Eyles, and with this twofold care upon his hands he has acquitted himself with great ability towards both.

Of the Kensington garden, to which we now restrict our notes, it was stated at the annual meeting, that in the previous season much had been done to render the gardens attractive at a time when the majority of the members and their friends could not enjoy the attractions which were presented; and, on the other hand, it was urged that the garden should be rendered even more attractive in winter than hitherto. Between these conflicting desires a happy compromise has been made; and without going to an enormous expense, the gardens have been rendered gay, whilst much of that flatness and deficiency in trees and shrubs which they hitherto presented have, by judicious planting, been removed.

At this season it is almost hopeless to endeavour to tempt any but the most hardy to prolonged out-door walks, accordingly the display of flowering plants is chiefly confined to the large conservatory. On entering this and passing along the broad central walk, on each side are fine Orange trees in tubs, with very superior-flowering Camellias here and there, and Rhododendrons, &c., at the back; whilst at the base of these are ranged rows of gay Duc Van Thol Tulips, Hyacinths of various hues, Cythususes, Deutzias, dwarf Camellias, Alma and Flower of the Day Geraniums, with a row of the *Isolepis gracilis*, which makes a very graceful edging to the whole.

Occupying the centre of the main walk is a very gay polygon bed, having in the centre a fine plant of *Cyathæa medullaris* surrounded with Lycopod; then comes a band of white Hyacinths, then one of blue, and nearer the edge a brilliant band of red Van Thol, the whole being bordered with Golden Chain Geranium with Lycopod interspersed. Although this bed was striking, the Van Thol Tulips seemed too powerful for the other colours.

employed, and to prevent the eye resting on these so much as it ought to do.

At the intersection of the main walk with the cross walk running to the south doorway, are several fine Camellias gay with their white and rose-coloured blooms; together with white Azaleas, *Kalmia latifolia*, Lilacs, and *Spiræa prunifolia*, the double white flowers of which are very ornamental; whilst in front on the walks are bands of Golden Chain Geranium.

But it is at the south side that the conservatory presents its gayest aspect, for there the whole of the flower-baskets, or brackets, which are placed at intervals along that side of the house for a length of 80 or 90 yards, are filled with Hyacinths, Tulips, and other early spring flowers, arranged on a conical elevation with excellent taste. The whole, especially when viewed from one end, affords a most striking and brilliant scene, and such a glow of colour as probably is nowhere else to be met with at the present season. The opposite side of the walk is likewise made gay by a miscellaneous collection of flowering plants ranged throughout its length in front of the shrubs.

On entering the door at the west end, the first basket we come to is, like all the others of which we shall speak, edged with Lycopod; next to this is a band of Voltaire Hyacinth, bluish; then a band of Diebitz Sabalkansky, and another red kind; next a pale blue sort; and the centre is filled with *Dielytra spectabilis* and *Azalea amens*.

The second basket had Lily of the Valley and Chinese Primula alternately; then came a band of pale blue Hyacinths; next to this a band of double rose, and the centre was filled up with plants for foliage and two tree Mignonettes.

The third had Lily of the Valley, then red Van Thol, mixed blue and white Hyacinths, the centre being filled with a Rhododendron and tree Mignonettes. The appearance of this was rather formal and not altogether pleasing.

The fourth consisted of yellow Duc Van Thol and white Hyacinths alternately; double blue Hyacinths formed the next band, within which was a band of double white, the centre being occupied by a deep rose Azalea and two plants of *Richardia ethiopica*.

The fifth basket had a band of blue and white Crocus in front; next to this yellow Van Thols; then white Hyacinths, with an Azalea and tree Mignonettes in the centre. This had been a very nice basket, but was past its best when we saw it.

It would be tedious to state particularly how the remaining baskets were filled—the above will be sufficient for an example of the system adopted. The materials employed were Lily of the Valley, Chinese Primulas, and Crocuses in the front bands; within these, Hyacinths of various colours and Duc Van Thol Tulips; whilst the centres were filled with Azaleas white or red, *Dielytra spectabilis*, or tree Mignonette.

The arrangement of the plants in these baskets, we were informed, is frequently shifted so as to afford, as far as possible, a change to the eye of the frequent visitor.

Outside the conservatory the vases on the terrace-wall are filled with Crocuses, whilst bands of these are planted along the front, the arrangement of colours being a band of white, one of yellow, then one of blue, and next to the wall of the conservatory a row of Wallflowers. Among the Crocuses were planted a few Hyacinths; but, from the difference in height, they did not harmonise well together.

On the terraces in front of the conservatory and in other parts of the grounds several new beds have been formed, and these have been filled with Rhododendrons, Irish Yews, Aucubas, and other evergreens; whilst in some, flowering Thorns, Lilacs, and other flowering shrubs have been planted. The panel flower-beds have been filled with Tulips, Scillas, *Muscari botryoides*, &c.; but as these are not yet in flower we must defer noticing them till another occasion, merely remarking that elsewhere there has been a plentiful introduction of shrubs to fill up the vacant flower-beds.

THE PRINCESS OF WALES' BRIDAL BOUQUET.—This was prepared and presented by Mr. Veitch, of the Royal Exotic Nursery, Chelsea. Enclosed in Honiton lace, and most tastefully arranged, were rare Orchid flowers, buds of white Roses, sprigs of Myrtle, and the customary Orange blossoms. The Myrtle sprigs were sent from Osborne by the Queen's special directions, as their parent tree was raised from a sprig which had formed a part of the bridal bouquet Mr. Veitch had presented to the Princess Royal. Similar trees are wished by Her Majesty

to be raised at Osborne from the Myrtle sprays of the marriage bouquets of each member of the Royal family. When Her Majesty heard of Mr. Veitch being in attendance with the bridal bouquet last Tuesday at Windsor Castle, she graciously directed a ticket to be given to him for admission to the Royal chapel to witness the marriage ceremony.

CLOTH OF GOLD ROSE FROSTED.

I HAVE a Cloth of Gold Rose on a wall with a south-east aspect, which flowered for the first time three years ago, but was nearly killed by the frost, which proved so fatal to Roses and evergreens everywhere. It has long branches from 5 feet to 8 or 9 feet long, without a shoot, but on the top of each there are tolerably good branches. How should it be treated?—A SUBSCRIBER, *South of Ireland*.

[For this season let the Rose alone, fasten-in all the strong shoots to the wall, and merely shorten their points; prune all little short pieces back to a bud. If the plant is healthy these pieces at the top will bloom well. If the long branches are sickly from the frost, it would be best to cut the plant down in the autumn, mulch and protect it in winter, and allow the plant to push afresh.]

DESTROYING THRIPS ON CUCUMBER PLANTS.

LIFE has been represented as a constant warfare, a perpetual struggle with difficulties; and certainly the cultivator, whether the farm or the garden be his sphere of action, finds it so. Diseases new to his experience, or insect enemies never before seen in numbers sufficient to be formidable, are constantly attacking the objects of his care, and a certain amount of loss is generally incurred before the best means of prevention or cure is discovered. Even this Journal would be still more interesting if every successful struggle were recorded and the means which have proved effectual plainly described. Let me have a word on this subject with your readers.

I am quite aware there are some selfish people who like to obtain information, but would not willingly impart it. I look upon them as belonging to *Les Misérables*—they are beneath our notice, a contemptuous pity is all they are entitled to. But there are great numbers of clever men and good gardeners who are afraid of recording their experience, because some stupid fellow is sure to say, "Bless me! has John Smith only just discovered that? Why, that's as old as the hills!" Is any one less obliged to Mr. Thomson for telling us how new Grapes may be produced at Christmas, because some one may say they have been so produced before? Or would Stephenson have been less anxious to bring the locomotive to perfection if he had known beforehand that some would-be *savant* would advance the opinion that not only the steam-engine but the locomotive was known to the ancients?

Let us remember that newly-acquired information, though not exclusively possessed by us, may be valuable to many. I have been led into this strain of reflection from having incurred some loss and much trouble by that troublesome insect the black thrips. A letter was addressed to you some time since on this subject—"How to kill the black thrips on Cucumbers," and at that very time I was anxiously seeking a remedy, and for a long time without success. Many years since I found strong tobacco-water quite effectual when, as in the case of Azaleas of moderate size, the plants could be entirely dipped in the liquor. Last autumn I had a house of Long-gun Cucumbers, grown for experiment, in splendid health; some fruit cut about Christmas were declared by Mr. Solomon, of Covent Garden, to be the best he ever saw at that time of the year. Much to my vexation these plants became much infested with thrips. I not only tried every remedy I could think of, but asked every gardener who came in my way for information. One said the best way was to destroy the plants, clean the house, and plant again; another said he knew of a remedy, but it was a secret. I knew at once he was a fool; they always have a number of secrets to keep. On all hands I was assured the thrips was very difficult to kill, particularly on Cucumbers.

At last I wrote to Messrs. Griffiths & Avis, of Coventry, to ask their advice. Their answer was they were sure their tobacco-paper would kill it. My reply was, our house had been fumigated eight times in a fortnight, and the men said the smoke would kill them before killing the thrips. I received a letter by

return of post, saying they quite believed the men's statement, for no man could bear smoke of sufficient density to kill this troublesome enemy. They also kindly gave a list of instructions for fumigating houses.

First, never smoke if the sun shines; next, choose a still day. Never open or shut a door whilst fumigating; never use coals, but light a handful of brown paper torn into shreds, put it into a pot, and the tobacco-paper also torn into small pieces over it, and blow at once. Let the house and the foliage of the plants be as dry as convenient. Smoke two nights in succession.

In accordance with these instructions I procured a gutta percha tube, had a small brass pipe attached to one end of it to insert into the pot side containing the tobacco, passed the other end through a small hole in the door, and there connected it with a bellows. By this means the house was filled with a dense smoke two nights in succession, and I believe every insect killed. The plants were quite uninjured, and are fast recovering their health.—J. R. PEARSON, *Chilwell, near Nottingham.*

THE ROYAL HORTICULTURAL SOCIETY'S SCHEDULES FOR 1863.

(Concluded from page 183.)

I now pass on to the second great Show; and here one is again struck with the immense amount of prizes given to stove and orchidaceous plants, for which, in a great many instances, the plants that have done duty at the previous exhibitions will again make their appearance, these, with foliaged plants, absorbing £262 out of the £446 10s. offered for this portion of the Show. I have no doubt plantmen will hold up their hands in horror at the notion of there being any doubt expressed as to the wisdom of the expenditure, and will tell me this Vanda cost £30, and that Cattleya £25, and this exhibitor would not sell his plant of that *Phalenopsis* for £100. Very likely; but this is no test of the amount of encouragement flowers ought to receive. Tulips are sold at equally extravagant prices, or at any rate quoted; but the Society does not think of offering anything for them, and, mad as Tulip-growers are, they would not be so insane as to ask that their prizes should be measured by the quoted value of their bulbs; and on what principle is £88 allotted to amateurs in Orchids and £25 to nurserymen?

As to the expense of growing, I think that to be a question which, with all due deference to other authorities, I cannot but think has been over-estimated in the comparison. On what grounds have the Exhibition Committee required new greenhouse Azaleas to be shown in June? They will recollect that they begin to require Azaleas on March 18th, and to have them three months after. That is requiring a great deal, and can only be done by a constant system of retarding; but Azaleas are in their glory in May, and then is surely the time for new sorts to be shown; for, from their being new, there is every anxiety on the part of the exhibitor to get his plants into bloom and forward for growth as soon as possible; and by endeavouring to keep them back until the third week in June a full month's growth, and that the best in the year, is lost, and with valuable plants that is of some considerable importance. There is not the slightest reason why they should not be shown in May, and perhaps it only requires pointing out to have the evil remedied; for I know that exhibitors of new Azaleas feel the regulation to be injurious to them, and they are naturally anxious to make as good a display of the new sorts as can be done.

Surely the *Dracenas* and *Cordylines* might very well have been left to take their place amongst the foliaged plants, for if they be as ornamental as the Council seem to think—a point on which I, for one, beg to differ—an exhibitor would take very good care to put them amongst them; but if they be, as I think with few exceptions they are, stiff and unmeaning, it would be surely better to put them out altogether.

The arrangement with regard to *Pelargoniums* seems peculiar, nor do I quite see on what principle the prizes have been arranged. If May be the month for Azaleas, June is unquestionably the month for this very familiar and effective flower; and yet no difference is made in the number of classes between this and the May Show. In May, Fancies are divided into two classes—for nurserymen and amateurs. Why that arrangement should be altered in June I cannot quite see, unless it be to allow spotted kinds to be brought in; but then would it not have been better to cut off some of the prizes for those

classes where money seems to be so lavishly given, and to apply it here and elsewhere?

Tropaeolums are to be shown in June! Now I have grown some of these for years, and have generally some good and large plants, and they are always in flower in March, and their beauty quite over early in May. Why, then, the Council should persist in placing them in the June Show I cannot conceive, especially as they found that last year there were no exhibitors in the class, and never will be in June. Just as they have done wrong in requiring *Amaryllids* in February, so here is an error in the opposite direction—but worse, inasmuch as I think that it is a good object to get plants early in the year, and every inducement may well be given to that end; but to require *Tropaeolums* in June when there is an abundance of other more showy and attractive flowers is surely a blunder of greater intensity, and one would think, with past experience before them, it ought to have been avoided.

Calceolarias have been omitted altogether from the schedule this year; and this, again, seems to me a great blunder. We have latterly seen brought forward a class of flowers in which the colours of the herbaceous kinds have been united to plants of a shrubby character, and for the decoration of conservatories in the later summer and early autumn months have been much appreciated. It seems a strange proceeding, then, after having set people on to grow these plants, to suddenly put the ban on them altogether. I happened to be standing by one of the exhibitors of them last season—a nurseryman—and having noticed that in the brief space of time that I was there he received several orders, I ventured to express my surprise; and he then informed me that he had received on that day alone more orders than he should be able to execute for months, and I believe more orders than any other plant received at the same Show, and yet it is now to be excluded altogether! This does not seem to be a wise way of commending the Society to the goodwill of all classes.

May I not put in a plea here for some flowers wholly omitted as well as the *Calceolaria*? Some weeks ago Mr. Carey Tyso, of Wallingford, took no little trouble in endeavouring to procure the names of the best show *Ranunculuses*, as so considered by different growers, and these lists were published in a weekly contemporary, and from thence copied into other gardening periodicals; but this flower is not one that the Royal Horticultural Society chooses to honour: it is excluded from their schedules altogether. The same may be said of *Pinks*, which are generally in their prime about this time, and around the boxes of which, when they are sent in for the Miscellaneous class, there is always sure to be a crowd of eager visitors and admirers. To have done these things after the strong representations of the Floral Committee, and after the opinions so freely expressed, of which some of its officers cannot be ignorant, augurs surely an amount of perversity one would hardly expect to find in a public body.

In making these strictures on the Society, I am in no way influenced by a desire to find fault. I wish it were everything it ought to be; but while so many blunders are perpetrated, it can never thoroughly enjoy the confidence of the exhibitors. Nurserymen especially are ill treated. "We get," writes one of the most successful of the exhibitors, "at the shows but scant justice. After subscribing our money and making their shows, they now ask us to help them by advertisements, and yet come into competition with us as distributors of seeds." This is, I believe, pretty well the feeling of the trade in general, and will ultimately lead, if not altered, to the end which the same writer points out when he says the "Society should not be supported by the trade." It may come to this; and, notwithstanding a long list of aristocratic subscribers, the real bone and muscle of the exhibitions are amongst the nurserymen.

—AN EXHIBITOR.

THE HYDROPULT.

WE strongly recommend this to the attention of our readers, for, which is not always in our power to say, it fully comes up to this statement of its proprietors:—"It is a fire-annihilator and garden engine, simple, effective, and convenient. It weighs but 8 lbs., and will throw 7 or 8 gallons of water per minute to a distance of 50 feet, when worked by the power of one man." It throws the water either in one stream, or dispersed in the form of the finest shower of rain, by means of a sprinkler which

is screwed on beneath the pistons, and which can be fixed when needed on the end of the jet.

Wherever a man with a bucket can pass there can the hydro-pult be brought into operation; so that narrow walks, and other places inaccessible with a garden barrow-engine, are no impediment to the approach of this very simple and very effective contrivance.

PARSLEY.

COMMON as is this kitchen-garden plant, and very often only indifferently treated, there is, perhaps, nothing which forms so universal an item in the daily wants of the household of a family of position; and it is far from being an easy affair to apologise to the kitchen authorities if it should not be forthcoming in early spring, even after an unusually severe winter. Such is the case now and then; and there is no doubt that the plant deserves a little more attention than it frequently receives, in order that its services may be reckoned on with greater certainty, if only to save the grower of herbs from some not-over-good-tempered mistress of the saucepan, who, in cases of "No Parsley!" may give vent to her disappointment in terms anything but complimentary.

After a very severe winter—such, for instance, as that of 1860-61—Parsley, as well as many other things, suffers sadly. In that winter many plantations were wholly destroyed; and what was left was rendered so weak that, excepting where precautions had been taken to leave some under cover, the supply for some weeks was very limited. In mild winters this evil is not so likely to happen, but it sometimes does so from other causes. Plants die off, and the dearth is equally great. As a means of preventing these calamities, let us look at the common practice and compare it with that likely to be more successful, and in fact proved by experience to be so.

In very many gardens it is not unusual to sow rows of Parsley as edgings to the walks bordering other crops. For instance: A square or plot consists of several kinds of vegetables, and a row of Parsley is sown as a boundary between them and the walk or pathway. This practice is not only excusable but highly to be recommended, only it must not, as is frequently the case, be done too often, otherwise the ground becomes tired, and the plant dies-off at the trying time in winter. It is, therefore, better to change the ground every time a fresh crop of Parsley is sown, and by that means one of the evils will at least be lessened if not entirely removed; as this change of soil is equally necessary whether the plant occupy a single row or part of a bed, border, or plot, the practice of sowing Parsley where it is most convenient to get at when wanted will not bear carrying out too long.

Wireworm is also another cause of Parsley dying-off. The root, thick and fleshy as it is, is nevertheless eaten through by these pernicious intruders; the top withers, and on examination it is found to be separated from the root an inch or so below the surface. The best remedy for this is a liberal dressing of soot and wood ashes, and, in default of these, lime is useful; but it must be used more liberally, being dug into the ground at the time of sowing, and a dressing given afterwards. Some soils are so much infested with this pest that it is not an easy matter to save Parsley over the winter; other crops, it is needless to say, suffering also.

Perhaps the most certain way to secure a supply of good Parsley in the months of February and March is to take up some plants in autumn, remove a part, but not all, the leaves, and plant them in boxes, pots, or pans, not too shallow. Place these for a time anywhere in shelter, removing them about Christmas to a warmer place where they will have light; and by the time above mentioned there will be some excellent Parsley, if the variety be good and other circumstances favourable. Digging up the frozen ground and carrying the hard-frozen plants at once into a hot vinery or other forcing-house, at a temperature of perhaps 60°, is an unnatural process; and though it will succeed, as we all know, it does so because the plant is so extremely hardy as to be difficult to kill, still the process carries its own impropriety on the face of it. A gradual forcing is unquestionably the best for everything that has to undergo that ordeal—Nature performs all her operations in this gradual way.

With regard to the proper time for sowing Parsley in the open ground much depends on the season. I generally sow a quantity in April and another batch in July. The seed lies longer in the ground before germinating than that of most other

vegetables, Celery perhaps excepted. The plants ought to be thinned, and they also bear transplanting pretty well. The main point is to have the ground deeply cultivated rather than enriched at top, in order to entice the roots downwards, and thereby lessen the chance of running to seed in August; but nothing can prevent the plants from doing so in spring, for after a year's growth Nature's law must be obeyed, and it is vain, by repeatedly cutting-out the seed-stems, to attempt making them into nice useful plants again. Other plants ought to be coming on to succeed them. The plant, being a sort of biennial, dies-off after ripening seed. It is, therefore, advisable in spring to stop the seed-stems of a few in order to obtain some leaves for garnishing while the new crop is coming on, the remainder being destroyed if not wanted for seed. I may also observe that it is a good practice to cut down a good batch of the most forward Parsley in the first week in September, in order that it may make a fresh growth before winter. Another portion cut once, a fortnight or three weeks later, will also furnish a later lot, taking care to insure always plenty to serve the purpose of the time being, as well as that which is to come.

It is needless to enter into the respective merits of the varieties of this plant, for every one knows what good Parsley is. It must be borne in mind that the finer the variety the more delicate it is. A plant or two of a plain kind will endure a harder winter than anybody's "Improved." This loss of constitutional hardihood is a sacrifice to improvement which other things as well as Parsley have to suffer; but in the case of the plant now before us the remedy is tolerably easy; it is only to protect a little and the object is attained. And, though Parsley likes good ground, that grown on soil of a medium character, not too rich, is more likely to stand the winter well, other things also being favourable.

J. ROBSON.

HYACINTHS.

THE lovers of this flower—those at any rate within reach of London, will have for the next fortnight an opportunity of seeing a fine sight, in Messrs. Cutbush's annual exhibition of these and other spring flowers at their nursery at Highgate. It has never been my good fortune to be in London at that time, but I hope this year to be more favoured; and although the season has not, generally, owing to the cold and wet time in Holland during May and June, when the bulbs were ripening, been as good a one as usual, yet I believe that Messrs. Cutbush's exhibition will be in no way behind those of former years. Probably it will be the more valued, from the fact that the show for them at the Royal Horticultural Society was fixed in February, and that unless the enterprise of our leading growers induces them to come forward, we shall not see the same display as in March last year. The task of describing Mr. Cutbush's exhibition has fallen generally into the better hands of Mr. Beaton. I am sure that I am only expressing the sentiments of every reader of THE JOURNAL OF HORTICULTURE, when I say that we all regret the absence of his genial and chatty pen, and to know that that absence is occasioned by illness, and that we, one and all, heartily trust that he may soon reappear amongst us, to be cheered and welcomed as an old friend.—D., Deal.

EFFECT OF GISHURST COMPOUND ON FRUIT BLOSSOM-BUDS.

HAVING continued my experiments with a view to ascertain under what circumstances Gishurst compound can injure fruit-buds, I have obtained the following results, which I am induced to send to you in consequence of an article in your Number of 10th inst. The first instalment of my trees were, in consequence of the season being so early, washed early in December, the solution being 8 ozs. to the gallon, fresh dissolved some forty-eight hours previously as recommended; the next instalment of the trees early in January. Neither, at the time the solution was applied nor a month later, showed any apparent effect; except in the cases of a few not-healthy trees, hardly a bud was touched on most of the trees—none on Apricots, Plums, Apples, and on the great majority of Peaches and Nectarines. Some of the Pears had a number of buds destroyed; others, Winter Nelis for instance, had not one. The trees which lost most have enough left for a full crop. I should have said that the trees were more thoroughly sowed than they are at all likely to be in other hands, the object being to have the extreme effect of the strength.

Having thus proved that 8 ozs. might be so applied as in some cases to injure buds, I then proceeded to ascertain what strength or mode of application would not injure; and having some trees purposely left unwashed, I operated on these at the end of January, when in my early situation the buds had come forward considerably. Some trees I washed with 8 ozs. to the gallon, and a few minutes afterwards washed with plain water; others I washed with a four-ounce solution without any after-water-washing.

In the more susceptible of the Pear trees some of the buds, washed with the eight-ounce solution were injured, notwithstanding the after-water-washing. Those to which the four-ounce was applied had, notwithstanding their forwardness, no buds touched. Under these circumstances, though except in a few exceptional cases, I shall continue on my own trees the strength I have always used—8 ozs. to the gallon, believing that the increased health of the trees, making more blossoms set, more than compensates for any buds that may fall off. I shall be disposed to recommend 4 ozs. in future to amateur gardeners, especially when their trees are washed when not entirely at rest.—GEORGE WILSON.

COCOA-NUT FIBRE DUST.

LAST year, in March, I received a supply of refuse from Kingston-on-Thames, and thought I would ascertain its properties and communicate the result to THE JOURNAL OF HORTICULTURE. I hope, therefore, that the remarks I am about to make will be taken in the light in which they are given; that being simply to state what I did with it, and what results attended the application.

Under my care is a fernery 42 feet by 23, which is formed into a grotesque-looking place by some sixty cartloads of sandstone containing a considerable amount of quartz. The interstices between the stones are filled with peat, loam, and silver sand, forming a good compost for Ferns in general. The plants did moderately well in this compost; but I must confess they cut a poor figure in comparison to their allies in an adjoining house, which were grown in pots crammed with the cocoa-nut fibre dust. It was this contrast that induced me to treat the Ferns in the house mentioned to a top-dressing of the dust. The house is exclusively devoted to greenhouse Ferns, and I may mention that several so-called stove varieties thrive well in it. The whole of the plants were mulched 3 inches deep with the dust in its rough state; but some strong growers received a double mulching.

When completed the appearance was neat, and gave quite a new feature to the place. So well did it look that a traveller in the trade noted down the place whence the material came; he obtained some, and he declares it is a bargain. Visitors also liked the stuff, for it looked so neat, no guano wearing a more golden aspect, nor being liked so well by vegetation, and in handling it does not soil the fingers.

After one season's growth the plants in the fernery had grown more in the refuse than they had done in two years before the refuse was applied. For instance: A "set on" plant (a term very familiar to gardeners, and which means a plant that refuses to become vigorous under proper treatment), of *Dicksonia antarctica*, with six fronds 2 feet long, put forth two fronds in spring, which I presume were the concentrated growth of the previous summer; but at midsummer, three months after the refuse was applied, six fronds began to show, and ultimately air-roots were put out from the short stem; the proper roots matted the refuse like turf, and the fronds attained 6 feet in length. Other six fronds appeared late in autumn, and they placed the "set on" plant in a position to grace, whereas it previously shamed, the skill of the cultivator. In its heart is the promise of another season's growth far exceeding the last, and it has gained 1 foot in circumference of stem during the last year. Would it have recruited itself so as to be vigorous without the refuse? It had the chance to do so for two summers, but it became weaker instead of stronger.

Take another example. *Woodwardia radicans*, fronds 3 feet long and proportionately strong, became so luxuriant that it strives hard to lift Hartley's rough plate glass off the roof, but being foiled in the attempt, its fronds, 9 feet in length, droop gracefully, the plant nearly eclipsing all its brethren from temperate regions for beauty, and, in fact, for its engaging peculiarities; but in general cultivation it is presented in browned fronds, stunted habit, and starved as often for heat as for

nourishment. Though said to be hardy, it is not so here. True, we have seen it just miserably existing in some places out of doors, but let those who wish to see *Woodwardia radicans* in character, prepare a vase full of refuse dust from the cocoa-nut fibre, put in the plant and place it on a pedestal in a cool greenhouse fernery, where, under ordinary cultivation, it will form a grotesque, picturesque, and gardenesque object, disputing the palm with all the drooping Ferns from every zone of our globe. In fact, I challenge the world to find a subject amongst all the varieties better adapted for an elevated position than the common and ill-used *Woodwardia radicans*.

In short, this dust is the best of all composts for Ferns; but the "old" is better than the "new" for pot Ferns, whilst the new is better for mulching purposes. Small-growing Ferns do very well in the pure refuse (old), but I cannot forbear adding a little silver sand. In fact, some of the delicate sorts, as *Ocheilanthes* sp., and *Nothochlenas* become too weak in the stems (stipes), without it, so as not to be able to support the frond in its proper position.

I also consider it wise to give the usual quota of sand to all plants, for I cannot see how silica can be present, in a vegetable substance, in sufficient quantity to meet the requirements of plants. Chemists say it is so, but I have seen the farmer obtain only half a crop from an over-luxuriant field of corn, whilst his next-door neighbour had a splendid crop from half the manure. With due deference, therefore, I dissent from the opinion that there is ample silica in all soils and manures to meet the wants of all crops. When there is an excess of manure applied the soil fails to yield silica in proportion to the growth of plants: consequently, the wood, ligneous or herbaceous, is gross, lacking those very constituents which give the wheat-stalk its strength.

I find this refuse dust is a compost for all plants requiring peat soil, or decaying vegetable matter; but it acts not only as a compost, but as a manure on plants requiring loam: therefore, as there is little silica in proportion to the other constituents in vegetable soil imperfectly decomposed, it is essential that a supply of the deficient ingredient should be applied by the cultivator; but in loamy soil, deficient for the most part in vegetable earth, an addition of the inorganic elements, particularly silica, would be superfluous.

Some Ferns like lime—as *Asplenium ruta-muraria* and *Polypodium calcareum*. Others require silica in considerable quantity—as *Blechnum spicant* and its varieties, and, indeed, nearly all Ferns from alpine regions, but the strong growers are not particular about the matter; yet loam will afford something of the inorganic but not inactive ingredient—sand. In spite of chemists and philosophers, I say that no vegetable substance or animal excrement contains enough of the inorganic elements to meet the wants of vegetation; and he who raises his plants with an excess of organic matter will lose by the lank growths, the feeble structure, the flimsy petal, and the altogether badly-grown and ill-shaped specimen. I have tried plants without the usual quantity of sand, but I must say no plant liked the experiment, neither did I; and I should no more think of planting a *Cucurbit* in pure manure without expecting to see it gorged into disease, than I should to live luxuriously and escape the first pestilence that occurred.

The refuse, then, has proved with me the best of all composts for Ferns, in its pure state, and old for the small growers, with a sprinkling of silver sand or pieces of sandstone not larger than a walnut added.

Half fibry hazel or yellow loam, half refuse, old or new, does for large-growing kinds, and that with a little sand will grow well *Geraniums*, *Cinerarias*, *Fuchsias*, *Achimenes*, *Gloxinias*, *Begonias*, and *Gesneras*, in fact better than the usual composts. *Primulas* like it, especially *Primula farinosa*, *scotica*, *nivalis*, *cortusoides*, and *marginata*; and I recommend it as a good substitute for sugar-scum or bullock's blood to *Auricula*-growers, as it emits no effluvia, and is so much nicer to handle.

Terrestrial Orchids—as *Cypripediums*, thrive well in the refuse dust. *Billbergias*, *Æschynanthus*, and *Tillandsias*, also *Marantas*, *Caladiums*, and in fact any deciduous or evergreen herbaceous plant that I tried did well in it; but the names of these are too numerous to recapitulate.

Now, then, for woody plants. For Oranges it is a specific; but although I reported favourably of it last year for *Camellias* and *Azaleas*, I have to record something not very corroborative. Last year I took the precaution to mix a little loam and sand with the refuse; but, anxious to mend well, I imprudently

potted some Azaleas with the pure material, and instead of being old refuse as in the previous year, it was new. The plants languished and died, still I do not blame the refuse for this, but my own imprudence. An Azalea has a close ball, so by potting in loose refuse, crammed in too, the water passes through it without wetting the ball at all: the consequence is, that the roots are dried-up, and when they are gone the plant goes also. This was a hazardous experiment, certainly, but the plants were doomed to be thrown out, for they were too large for our small houses.

Others have been in an equal dilemma with myself, and although giving their vote for the refuse as a first-rate material for Ferns, Begonias, Gloxinias, &c., they prefer peat for hardwooded plants.

A florist who grows Camellias well had a few sickly plants, and he, fingering my refuse dust, ordered twelve bags; so when the parties just mentioned remonstrated against my recommending the refuse for Camellias, I went to see what he had made with his twelve bags.

"How do you like it?" "Very well." "That's strange," exclaimed I; "I had two gardeners from H—— last week, and they do not like it." "But, I do," rejoined the florist, "and I have been to the Midland station to see what they will bring a truck for." This was proof enough. My friend liked it, and stepping into his greenhouse he took me to a lot of young Camellias, only grafted last year, growing in the infallible refuse dust. Some were in flower, and I in a quizzing way said they were nothing extra. "Nothing extra!" said he indignantly; "look at the size and bright green of their foliage, the brightness of the colours of the flowers, their size, and feel for yourself the stoutness of the petals," all the while holding the flower in his hand between his fingers; "and," continued he "where will you find a better-formed flower?" The points were incontestible: therefore I simply said "it was an exception." "An exception!" quoth he; "but look here, in an adjoining house, for growth on my two-year-olds, none of your three-inch shoots, but a six-year-old plant in two years." That was enough; he had tried the refuse, and had become an enthusiastic lover thereof. He uses it, half loam, half refuse, with a good admixture of silver sand, or about one-sixth of the whole. He says, and his plants bear testimony to the fact, that it is good material for Acacias, Azaleas, Camellias, and anything requiring peat soil or leaf mould. He puts his bedding plants in with a sprinkling of the refuse; but he does not place an Azalea with a ball as hard as a turnpike road in the pure refuse as I did, but uses half loam and refuse, and gives the whole a sprinkling of sand, which is very different from potting in the rough refuse.

I tried what effect it would have on Rhododendrons; but as they grow so luxuriantly here, though the soil is a strong loam, the difference was not great, though decidedly in favour of the refuse.

Some one, Mr. Beaton, I think, hinted that the refuse would be a good compost for Melons. Unfortunately, I had not a frame at liberty, but in the first week in July I planted two plants of the American Ridge, one in a bushel of refuse, the other in loam, and two of Achapenorricher Melon in a similar manner, and treated them alike. Both set their fruit immediately, and as the season was far advanced a couple of fruits were only left on each plant. The American in refuse gave a Melon, large, deep green, changing to yellowish-green when ripe; flesh red; flavour poor, but late Melons are not over-well-flavoured in general, slightly netted; shape of fruit elliptical; weight of each fruit from the plant in the refuse, $1\frac{3}{4}$ lbs., and 3 lbs. 6 ozs. respectively. The plants in ordinary soil gave smaller Melons but of better flavour, the weight being 1 lb. 7 ozs., and 1 lb. 12 ozs. Achapenorricher in refuse afforded a Green-fleshed Melon, the rind netted and warted, spherical in shape, of a moderate flavour, flesh thick but melting, and rind no less thick. The fruits weighed 1 lb. 14 ozs., and 1 lb. 7 ozs. In common soil the fruits weighed respectively, 15 ozs., and 1 lb. 4 ozs.

My master, who is partial to Melons, pronounced these new kinds of Ridge Melons flavourless Pumpkins; but he cannot appreciate (and he is a judge), any other Melons than Scarlet Gem, Excelsior, Beechwood, and Egyptian. The Persian breeds, however, are equally good. The smaller the Melon the better the flavour, and the larger they are the more sugar is needed to season them.

A few handfuls of refuse sprinkled on the meadow made people inquire the reason of the place being different from the rest, and it shows itself now. It would be a good dressing for mossy-bottomed lawns.

Potatoes do well in it, and give an increase of weight over ordinary manure. From a nine-yard row of each the weight was—of manured Potatoes, 2 st. 8 lbs., and from the refuse dusted, 3 st. 4 lbs.

The rough refuse fibre appears to be a good substitute for peat for Orchids; but as I have not tried it with more than a dozen plants or so, and as I intend to test that material this season, I cannot speak decidedly. However, the results already attained are very gratifying.

In conclusion, I beg to tender my thanks to those who first proved the merits of the refuse dust, and more especially to those who made known the material, thereby placing in the hands of the small gardener and amateur a substitute for the not-always-comeatable ingredient peat, and even when it is to be had, not always of a suitable composition. Through writing to THE JOURNAL OF HORTICULTURE, my time has been seriously encroached on by private communications, and as this is inconvenient to me, I purpose, but reluctantly, to become an unlocated correspondent of this Journal: therefore, good readers and correspondents farewell.—G. A.

AERIAL ROOTS ON FRONTIGNAN AND CONSTANTIA VINES.

VINE-STEM INARCHING.

SOME Frontignan and Purple Constantia Grapes, which I have in the same house with Grapes of other varieties, begin at a certain stage to emit aerial roots, which dry-up, as the house is kept dry to ripen the crops, and the fruit becomes worthless. As this is not the case with other Vines (St. Peter's, Black Hamburgs, &c.) in the same house, it is evidently not owing to mismanagement inside the house; but, in all probability, the outside border should be of a different soil for Frontignan Grapes—perhaps of a hotter and drier nature. I should, therefore, be glad to know whether, if they were in a border by themselves and with a third or fourth of sand or gravel, you think they would answer better, though the soil should lose in richness? The present border is of the common description, as recommended for growing Vines, and is covered in the winter by tiles in order to protect it from wet.

Would you also inform me whether it would be difficult to inarch the stem of a Vine, about ten years old, low down? as, by this means, the pot with the young Vine to be inarched upon it could rest upon the floor of the house. The proper and best plan would be, I suppose, to inarch upon young wood; but the former, if feasible, would be the more convenient.—AN AMATEUR.

[You will help your Vines by pulling-off the aerial roots as they appear, which will force them to root in the border; then dig a drain or a deep well opposite them in the border, and work in some lime rubbish. If that does not have the desired effect, then raise the roots next autumn; at the end of September replant in fresh soil, of which lime rubbish may constitute a third. We should use that, broken bricks, and charcoal; but not sand or gravel.]

As to Vine-inarching, you may either inarch or graft before the sap is in motion; after that you can graft with a dormant scion after the leaves of the stock are expanded. The inarching in the growing period is most easily done when both are growing as you state. See "Doings of the Last Week."

ORCHID CULTIVATION, CROSS-BREEDING, AND HYBRIDISING.

THERE has been for the last few years a steady and unabating increase in the ranks of Orchid amateurs all over the country. Gentlemen of wealth, not only in England, which once reigned supreme in this respect, but also in Scotland and in Ireland, have devoted large sums in founding, and adding to, collections remarkable for their individual and intrinsic beauty; and all of them possessing an interest which we may look for in vain in any other of the great divisions of plants. To the great body of the people the allocating such large sums for, in many instances, such small commodities seems inexplicable and anomalous; but to those who have cultivated a taste for flowers, and who are accustomed to see the greater portion of the choicer subjects of Flora under cultivation, this division possesses an interest, both individually and collectively, such as to warrant any reasonable expenditure. Besides, it is well known that skilfully-managed

collections, remarkable for their rarity and beauty, are always growing into money, so that, commercially speaking, the sinking of such money is a profitable investment.

Superiority of cultivation, then, seeing that it is about a quarter of a century since the mode of growing them and classifying them into divisions and subdivisions became better understood, ought to be a marked feature in their history; for there has been no want, either of men to experimentalise and find out the best methods for promoting their growth and encouraging floral development, or means to carry out their views. It is very questionable, however, if the truth were known, how far we have upon the whole gained in this respect. Eight years ago, when the writer sojourned in the metropolis, Orchids were in better condition, evincing somewhat more superiority of culture than we can boast of at the present day; at least, judging from what was exhibited then in comparison with what was exhibited last season. This is a somewhat bold assertion, but it seemed to be the opinion of more than one, and of some of the exhibitors themselves. There are some private collections around London that are a credit both to the gentlemen that own them, and to the gardeners who superintend their management; but numbers of these are holding aloof from sending their plants to the exhibitions, and this branch of horticulture is not so strongly represented before the public as it actually is entitled to be.

It has been remarked with a certain degree of truth that Orchids are not difficult to cultivate. This remark holds good with everything else, only one requires to know and adopt the right method. A first-rate Orchid-grower, however, must be exceedingly attentive and vigilant, taking cognizance of their peculiar habits, in order to fall upon the best plan for accelerating and consolidating growth; so as, in the one instance, to make them proof against disease, and in the other to promote good flower-spikes, and flowers large and full of substance. This is a task far more difficult to accomplish than many would suppose, for it is one thing to have a collection that may be considered fairly grown, and another thing to have one coming up to the superlative style of merit. There is the temperature best suited to the constitution of the plant; there is the material for the promotion of root-action; there is the quantity of moisture that each and all require, and the time when it should be applied—all these matters demand more than a passing glance, or an off-hand dealing with, if it be wished to rise beyond mediocrity; and yet you will not find half a dozen men that adopt precisely the same method, and all, probably, are successful to a certain degree.

Some, for instance, grow *Phalanopsis* on blocks of wood without any foreign matter whatever; others grow them in pots, the predominating compost being charcoal and manure, which is about as diverse treatment as it is possible to conceive. They grow and root splendidly in the latter compost, if a little sphagnum is chopped up amongst it; but it requires a skilful hand to water them, and they must not be overwatered upon any consideration in such a compost, else the roots are presented with more moisture than they can absorb; and hence elongation ceases, their pores are choked, and they gradually rot away; their leaves of course suffering in proportion. But, more than that, such gross feeding subjects them to the very evil which was recommended to be guarded against—disease; and, when once these rare and fine plants are contaminated, it requires time to produce a remedial effect. But to go into this thoroughly, and discuss it as it ought to be discussed, would require a series of papers, for this whole Orchid-cultivation question admits of a more thorough investigation than what has yet been accorded it, for the sake of horticulture generally, and more particularly for the benefit of numbers who have begun founding a collection, and who, feeling their way step by step, are anxious to obtain reliable information in ascending the scale.

There is one peculiar incident in the seeding of Orchids which is sufficiently anomalous to be worthy placing on record; and if it should meet the eye of Mr. Darwin, I should be glad to know if any like occurrence has come under his investigation, and the conclusions deducible therefrom. There are in our collection a plant of *Cattleya crispa* and one of *Dendrobium cretaceum* that produced, in each instance, abortive flowers. The buds swelled and inflated themselves to a certain extent, but were unable to expand their sepals and petals, and I supposed at the time they would fall off and die. Not so, however. The foot-stalks began to assume a more healthy green, and gradually swelled and produced seed-vessels, so far as exterior appearance went as perfect as those that had flowered in the regular way.

This appeared to me all the more strange, for the organs of fructification were enveloped all the time by these sepals and petals, so that no insect or other agency could in the least affect them. I cut up the *Cattleya* when ripe, and it was full of the fine white chaff-like dust common to the whole genus. The *Dendrobium cretaceum* pods still hang on the plant.

Again, I have observed over and over again that flowers of an imperfect character, such, for example, as those wanting a petal or sepal, have a great tendency to go off to seed-pods; for Mr. Darwin correctly remarks that so soon as a flower is fructified the ornamental portion of it immediately fades, and the nutriment is absorbed by the organs of fructification.

But I have also had pods without the least manipulation from perfect flowers, and have tried them in various ways, in order to get what I believe to be the seed to germinate, all to no purpose. Mr. Gorse, of Sandhurst, Torquay, an enthusiast in all such matters, seeing a short article of mine in a previous Journal respecting the seeding of Orchids, wrote to me to know how I had succeeded in my various experiments. I replied privately to that note, and enclosed a packet of *Odontoglossum grande*, which brought forth the following reply:—

"I am much obliged for your polite note, and for the packet of seed of *Odontoglossum* which is enclosed. It was very kind of you to send it, though, after your failure, I should have had little hope of succeeding. But, my dear sir, the seed is barren. On careful examination with one of Powell's microscopes, with a power of 300 diameters, I cannot discover a single seed which contains an embryo. There is the long, loose seed-coat, ribbed and twisted, which ought to hold a naked embryo, as a minute opaque dot somewhere in its interior; but in no single example was the embryo seen, though the transparent tissue of the seed-coat would readily have allowed it to be seen if present. Probably your plants were not properly, not really, impregnated. I think Darwin has touched the real spring of the general failure of Orchids to produce seed with us. He has shown that no Orchid blossom is self-impregnating, that the pollen of one flower fertilises another, and that this is effected almost universally by means of insects, chiefly bees. But the ventilation of our Orchid-houses is so managed that few flower-probing insects find their way into them. I am myself only a beginner in Orchid-culture, and that on a small scale; but for you, or any other clever man who has a large supply of Orchids at command, I do not doubt that a promising field of experiment is open. If I had such an opportunity I would encourage the access of bees to my plants in flower by all means; and even catch bees of different species—honey bees, wild bees, humble bees from the garden and field—and turn them loose in the Orchid-houses. Thus I think you would get many flowers impregnated and have fertile seed in abundance. Veitch's successes are all hybrids; in these cases the impregnation was done by human hands, and of course was effectual."

Well, I thought this letter, which I received last October, was most interesting, and, what with this and Mr. Darwin's theory and experiments together, I set earnestly to work. In the first place I determined to experiment upon a *Phalanopsis amabilis*, crossed with the more delicate and pretty roses, thinking if I could but be successful it would be so much gain in the right direction. I took off the hood or capsule that covers the stamens—and really one cannot help wondering how each component part is fitted to one another—with the point of a budding-knife, and the gummy substance that holds the stamens to their position in the flower (for it is only an appendage, and can be taken off without the least scratch to the column), stuck fast to my knife in the same way as I presume it will stick to the insects in Java or the Philippine Islands, and to my delight I could carry it up and down the house *ad libitum*, or could even send it with the utmost safety to your office in Fleet Street, or to the laboratories of Messrs. Darwin and Gosse, so as to be fit for duty after arrival. I applied this to the pistil of *amabilis* with much earnestness and care, and have now a very fine seed-pod as the result.

Vanda tricolor was served in the same way with *Vanda insignis*, and with the same results; *Cattleya labiata* with a chance flower which came from *C. crispa*; *Oncidium Phillipsianum* with *O. leucochilum*; and some others, all with success. I was, of course, very much pleased so far, and I am very anxious to know whether I will be able to make them germinate. That point of the experiment yet remains to be tested, and I shall take an opportunity hereafter, if spared, to record the results.

About a month ago I crossed *Phalænopsis Schilleriana* with the new Bornean variety, and have a splendid seed-pod as the result of that experiment. There are several varieties of *Schilleriana*, some producing flowers much more perfect than others, and varying in shades of colour. Some, too, are much closer arranged on the spike, and show at once the correctness of the enunciation that a plant scarcely ever reproduces an exact likeness of itself.

The Bornean variety is much the best of all the grandiflora breed. Its flowers are larger, of greater substance, and of inimitable purity of white. Its form is as good as *amabilis*, both sepals and petals being larger and more full, and the flowers are so closely arranged on the spike, although not confused, as to give it a very formidable appearance. Its only damaging point is, that the edges have a tendency to turn back; and this, in a florist's point of view, somewhat mars its individual beauty.

To return to the experiments. I was curious to try my hand at hybridising; and having a nice plant, with a couple of fine flowers on it, of *Paphinia cristata*, I fixed upon trying to cross it with one of its terrestrial congeners—*Calanthe vestita*. In this I was also successful, for a fine pod hangs on the plant as a voucher thereto. I also hybridised *Limatodes rosea* with this same *Calanthe*, which has been done beforetime, I understand, with success, so that I did not value this hybrid so much. The pod of this is now ripe, and I will be enabled to enter into the second, and, to my thinking, most difficult part of the experiment.

Now, in conclusion, there are two points that I should like the scientific pen of Mr. Darwin to throw some light upon; and that is, Why these abortive flowers produce seed-pods to all outward appearance as perfect as those that have been impregnated? And why those flowers that never expanded, whose organs of fructification never were under the influence of light and atmosphere in the same way as other perfect flowers are, produced seed-pods at all?—JAMES ANDERSON, *Meadow Bank, Uddingstone.*

GALVANIC PROTECTOR FOR KEEPING SNAILS, SLUGS, &c., OFF FLOWER-BEDS.

PROFESSOR William Thompson recently, before proceeding to the regular business of the natural philosophy class in Glasgow University, said that a very curious application of Sulzer's experiment had been made known to him. This experiment, as they were already aware, was:—When a piece of copper or silver and a piece of zinc are placed one above and the other below the tongue, and then put in metallic contact with each other, either by direct contact between them, or by wires connected with them, and put with their ends in contact at any distance, an electric current was produced and felt in the tongue, this organ acting as an electrolytic conductor. He had great pleasure in bringing before them a practical application of this experiment for the purpose of protecting flower-beds from the inroads of snails, slugs, and other kinds of creeping creatures. He had not, indeed, seen it; but he had been assured of its success. The way to apply the experiment was as follows:—A zinc plate, the upper edge of which was bound with copper, and elevated 2 or 3 inches from the ground, was so placed as to encircle the plot of ground which was to be protected. When any creeping thing, attempting to get over this little wall, came in contact with the zinc and the copper, it experienced an electric shock; indeed, it could not be an instant in any position touching the two metals at once without such a result taking place. The question now to be solved was, whether the snail, slug, toad, or frog would be so sensitive as to be deterred and struck back by the amount of the shock which it received under these circumstances. Mr. George Edgar, who was the inventor of this remarkable application, had assured him that he had tried the experiment with leeches, and that it succeeded perfectly. Mr. Edgar was present and had brought what was necessary to test the application.

Mr. Edgar then came forward and made experiments before the class. He placed leeches both inside and outside a part of the table enclosed by a zinc wall with copper mountings. When the leeches crept so far up the plate that their bodies touched both the zinc and the copper, they experienced an electric shock, and fell backwards.

Professor Thompson remarked that Mr. Edgar had tried the experiment with snails and slugs, and found they were more

sensitive to the shock than leeches. As he had already remarked, the question to be solved was whether the creatures were strong enough to persevere in getting over the wall, notwithstanding the shocks they invariably received. He might add that it was not necessary that the bottom of the plate should be buried in the earth, as it was enough if the plate was so placed in the ground that the creatures whose inroads were to be prevented could not get under it. To prevent the zinc plate from oxidising by damp, &c., the lower part of it might be protected by a coating of paint, pitch, or some similar substance. Indeed, the plate might be completely insulated from the earth, all that was necessary for the electric effect desired being, as he had stated, zinc and copper in metallic connection with one another, so placed that the marauder could not get into the guarded precincts without touching the two metals simultaneously. Of course, if the zinc is well polished, the shock given is greater than with a tarnished zinc surface. If, therefore, this plan of protecting flower-beds and other plots of ground produced all the results which were desired and anticipated, it was possible enough that one of the duties of a gardener in a morning would be to go about and polish his zinc and copper enail-guard.

[This is no novelty. It was invented by Mr. W. Walker of Hull, and communicated by him to the Society of Arts as long ago as 1839. A full description with illustrative drawings are in London's "Gardener's Magazine" for 1841, showing how it is adapted to flower-pots and other garden uses. The metals becoming oxidised, and then ceasing to galvanise, require often to be rubbed bright with sand-paper, and this trouble has caused their disuse. Two or more makers advertised these plant-protectors at 14s. per dozen in the periodicals of 1841.—EDS. J. OF H.]

ARRANGEMENT OF TURF IN FORMING A GARDEN.

GRASS lawns are such indispensable features in modern gardens that few, if any, can be said to be complete without them. Sometimes a broad sweep of lawn is made the principal feature; but more frequently grass forms the groundwork to set off others, and well it is adapted to the purpose.

The time is at hand when lawns will give unmistakable signs that they require attention, that the scythe and the mowing machine must be set to work to keep them in order. This also is the time when many small gardens are laid out or altered; and as, more or less, grass enters into the composition of all, or nearly all, of them, a word on the subject may not be inappropriate.

It cannot but have struck many working gardeners that where anything has been attempted beyond the ordinary level grass plat and grass verge one important point has been entirely overlooked, or at least not sufficiently taken into consideration, and that is the time and expense necessary to keep it in proper order during the growing season. Large quantities of turf are laid in such a manner that neither scythe nor machine can be used on it. It is formed into such sharp angles, both horizontally and vertically, so thickly planted with shrubs, &c., or roots and rocks form such intricate passages, that nothing but the small hand-shears can be used to cut it, and this, it is well known, is a very slow method of grass-cutting.

I once knew an instance where a gentleman, who had an eye to the fanciful in gardening, had his garden laid out in such a manner that, although nearly half of it was turf, there was scarcely a part where anything but the shears could be used on it. It looked very well while the grass was inactive, but when the growing season arrived it was found that the ordinary labour was not sufficient by two-thirds to keep the garden in order; and as he had not calculated on the additional expense of employing another man merely to clip the grass, he found that he had committed a grand error, for of all things that tend to make a garden unattractive nothing is more effectual than neglected turf, and that still more so when formed into steep banks, narrow windings, and fanciful edges.

In very small gardens which take less time to manage, such intricacies of turf may be excusable, as it can be more easily controlled; but even here some consideration ought to be given to the time that can be spared during the summer for keeping it close and neat, as, where this can be done, some of the prettiest effects can be produced by a well-planned mixture of turf, shrubs, and flower-beds.

In gardens of any extent, where turf is extensively used, it is of importance to apply it to the best effect without incurring such an additional expense as may become irksome to the owner, or the chance of the turf proving a source of trouble and vexation to the gardener, for if true taste is economical in any one thing, it certainly is so in the matter of laying down turf; and I cannot see why it cannot be done to the best effect where the scythe or the machine can be used effectively. Gentle slopes and undulations of turf generally look well, and these can be mown; but steep banks are, in my humble opinion, neither attractive to the eye nor comfortable to traverse, and certainly I do not believe they compensate in any way for the extra time necessary to keep them in order.

In natural scenery I think we shall find that where ground is covered with a close herbage, the rise from low to high ground is gentle and gradual, and that steep descents belong to rocks for the most part barren; and although it is not necessary slavishly to copy Nature, we ought at least to keep within certain bounds and not stray too far from her teachings.

Every year new gardens are being formed, or alterations are made and, generally speaking, the whole attention is given to picture-effect, with scarcely a thought as to how that effect is to be maintained. Turf is laid just in such a manner and place as requires the utmost stretch of time to keep it as close as it should be. In the same way nurseries are ransacked for shrubs and trees of just such a size and height as are required for the moment. Many of them die, the rest become too large in a year or two unless they are severely punished to keep them within bounds. It would be greatly to the advantage of the owners to give a little thought beforehand to such matters, as, in selecting subjects for planting a new garden, how important it is to have young well-formed plants that are certain to live, giving in addition the pleasure of watching them grow; and also to lay the turf in such a manner that it can be mown off quickly and kept clean, unless it is considered preferable to see a man in his shirt sleeves at the everlasting task of clipping to keep it short.—F. CHITTY.

STROBILANTHES AURICULATUS.

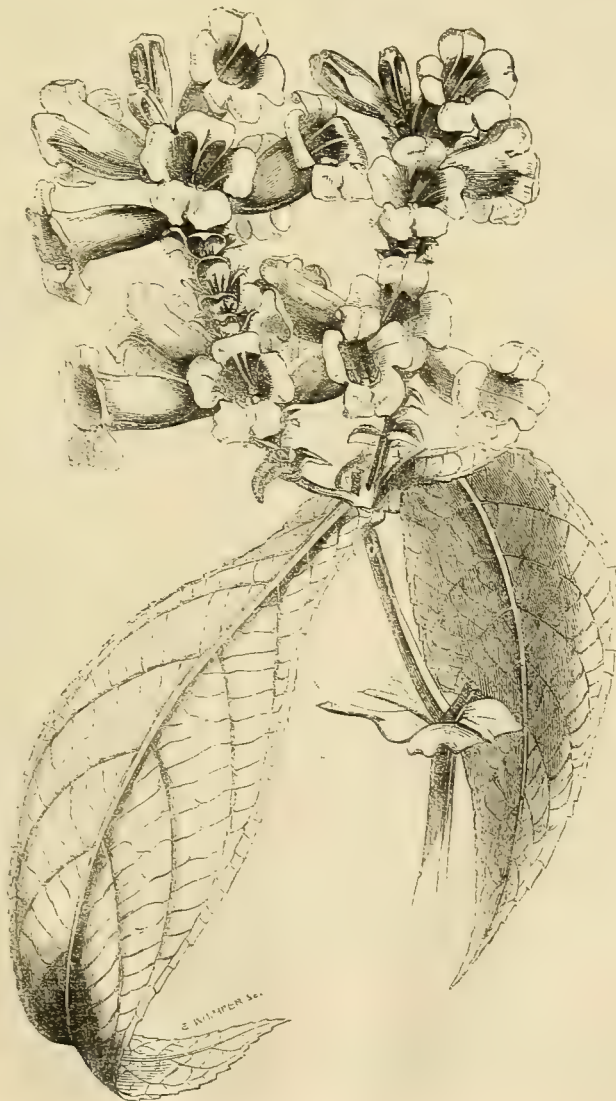
THE order of Acanthads contains many pretty stove plants of the "soft-wooded" class, which, from their affording considerable variety, and from many of them being winter bloomers, are desirable in gardens where conveniences exist for the cultivation of plants of this peculiar stamp. There are the *Apelandras*, the *Porphyrocomas*, the *Schauerias*, the *Eranthemums*, the *Goldfussias*, the *Beloperones*, the *Ruellias*, the *Cyrtantheras*, and many other family groups, all yielding species of a more or less ornamental character; and though not quite so striking as some of these, there are some *Strobilanthes*, such as *S. Sabinianus*, and the subject of the present notice, which possess sufficient merit to claim admission, if only for variety's sake.

Strobilanthes auriculatus is a vigorous-growing branching plant, of from 2 to 3 feet high, bearing stem-clasping elliptic-oblong leaves, which are narrowed to the base, and strongly auriculate; they are hairy on both surfaces. The flowers come on short axillary branches, and issue as is usual in this genus, from a spike of imbricated leafy bracts, which, having the character of a strobilus or cone, seem to have suggested the generic name. They are very pale blue, prettily veined, and when a considerable number are expanded at one time, are rather attractive. Their defect is, that they individually fall too soon.

The plant is a native of the East Indies. We have no exact information as to its introduction to this

country. The plant was presented about the year 1850, to the Chelsea Botanic Garden, by Messrs. Henderson, Pine Apple Nursery, Edgeware Road. With us it has blossomed in February.

Nothing can be easier to cultivate or increase. It grows vigorously in a stove, if potted liberally into a free compost, which should not be too rich. To develop its ornamental qualities, a good plant should be grown on through summer and autumn, and then allowed a short rest. The excitement of additional heat will then cause it to throw out the flowering branches. To produce smaller blooming plants, cuttings taken from a nearly matured growth, will usually branch into flower, as happened with that from which the accompanying sketch was taken.—M.—(*Gardeners' Magazine of Botany.*)



Strobilanthes auriculatus.

VINEYARDS IN ENGLAND.—Out in the fields near the remains of Beaulieu Abbey, Hampshire, stand the ruins of a building, now a mere pinfold for cattle, called by tradition the Monk's Wine-Press, whilst the meadows beyond, lying on the slope of the hill, are still known as "The Vineyards." This term is still frequently found hereabouts as the name of fields generally marked by a southern slope, as at Beckley and Hern, near Christchurch, showing how common formerly was the cultivation of the Vine, first introduced into England by the Romans.—(*Wise's New Forest.*)

TAR OR ASPHALT WALKS.

IN some recent Numbers Mr. Robson has described the various materials of which paths and walks may be made, and the principles of their construction. May I add, as a supplement to his remarks, an account of the tar paths which are at present much used in this city by our surveyor of roads? The body of the path is made of the soft oolitic stone or other rubble free of dirt. This is brought to a tolerably even surface with the rake, and over it is laid about 3 inches thick of a hard mountain limestone, known here as Clifton Black Rock, which has previously been broken into pieces not exceeding an inch and a half in size, and these passed over a three-quarter-inch riddle to separate the finer particles. The stones are then very equally mixed with enough cold gas tar to cover every stone, but not to leave more fluid tar than can be avoided. They are spread equally with the shovel over the softer foundation, and when levelled are carefully rolled with an iron roller drawn by two men, to give a smooth surface. This is then sprinkled with about three quarters of an inch thick of the finer particles of black rock, whereby any fluid tar is absorbed and a finer surface obtained of a hardness equal to the stones. Of course, a dry day must be selected, as all the materials must be dry, otherwise the tar will not adhere to the stone. Four men will lay down a very long piece per day—the more pains are taken the better is the path.

At first the stones, covered with tar, were laid down without sifting; the result of which was that the path was never smooth, the larger stones cropping out and being uncomfortable to the feet. Where barrows are likely to be used, paving occupies the middle and the edges are tar paths. A better path or one more pleasant to use cannot be made, and the more it is used soon after its first formation the better it becomes. The objection to it is, that for some months in warm weather there is the smell of gas tar. It is very inexpensive, lasts for many years, and acquires a dull grey colour. One's day's work is easily joined to the piece made in the preceding day. The fear of the offensive odour led the City Act Committee to order in some parts paths to be made of puzzolana, ground lime, and stone, but these are at least one-third more expensive, and are not so pleasant for foot passengers. Blindfolded, one could notice that they do not possess the elasticity of the tar paths; nor is it probable that they will wear so well, the whole material not being so hard, while it is more brittle, it cannot be laid so smooth, and the joints are never good.

Some years ago I laid down some tar paths, running between Box-edgings, in my kitchen garden. They were made with boiled tar and sifted rubble; but from further experience I should not now adopt them, for the Box is killed where the tar surrounds the stems, the weeds grow between the edge of the tar and the Box, and the materials of the walk rise at the edge, so that the whole path becomes irregular in two years. This, probably, would not occur if slate or wood-edging were used; but it must always be remembered that if the soil below the tar or cement paths be damp, the first hard frost will make it rise, and large patches will peel up. Paths of the above description answer best when flanked by a wall, and when above the level of the soil; if below it, or not thoroughly drained, they soon perish.—A BATH MAN.

SHADING FERNERIES.

SOME reader of this Journal may have a fernery requiring shade from the sun's rays, and may be anxious to know of a cheaper mode of shading than by using tiffany, bunting, hexagon netting, &c.

We had such a house, costing some £3 10s. annually in tiffany, which was more than it cost in heating. We wanted a permanent shading material, for the Ferns were planted out, and, therefore, not likely to be used for any other purpose for some years. I had some squares of glass, mixed some whitelead paint and painted three squares of various consistencies of paint, one thick, another medium, and one thin. Then, holding one of them to the sun, where the mercury was driven up to 104° in the full solar rays, I could see no sun through it, and a thermometer under the glass read 71°. That was the square painted with the thick paint, which was too opaque. The medium-thick paint allowed the light and heat to pass through the glass until the thermometer became stationary at 81°; that, also, was too opaque. That, however, with the thin paint on it could just be

looked at when held between the eye and the sun; and the thermometer under it rose to 86°.

I painted some squares green, others red, some blue, and more yellow. Then placing these together along with the white, I had contrasted shades or rays of light, but as red, blue, green, and yellow tinted the plants, though they did not alter the colour of the plants, yet these looked as if surrounded by a coloured atmosphere; but white-painted glass had not any such drawback: therefore I considered it the only colour fit for the purpose of shade, as it gave pretty nearly the same light as nature—I mean, allowed the light to pass through the glass untinted, unlike the other colours.

The painters were sent for, given the pane of painted glass, and told to paint the glass roof outside exactly like it. They hinted that to dash their dust-brush perpendicularly lightly on the painted glass would give it a frosted appearance. That was a first-rate suggestion, and therefore acted on.

The roof must be thoroughly dry before the paint is put on, and the internal atmosphere kept as low as possible, air given, and every means available taken to prevent water condensing on the glass, for water finds its way through the laps, and runs down the squares outside, leaving marks a quarter of an inch broad, and that spoils the appearance materially.

The appearance when completed was superb, and the utility of the plan was very great. The plants thrive well, and though gloomy in winter the plants keep their colour, and are in nowise drawn. The paint shading prevents the internal temperature from cooling as rapidly as with tiffany, and is not liable to become hot so soon—in fact, it gives a uniform temperature, becoming neither quickly hot nor soon cool, and that is what most plants that grow in shady places require. How long the painting will last I cannot tell, but ours has stood three years, and is as good as ever. A plan like this gave in three years some £7 for the gardener to buy something extra to gratify his master, which otherwise would have gone in tiffany.—G. A.

MORE ABOUT POTATOES.

AS "UPWARDS AND ONWARDS" has been giving a description of the best Potatoes he saw at the International Exhibition at South Kensington, so far as their appearance went, perhaps a few words from one of the exhibitors may not be out of place, stating their different habits of growth and eating qualities.

I will take first the first earlies, as they are the first ready for eating.

Old Ashleaf.—A capital cropping and superior eating Potato; but for exhibition purposes it is not a good one, as you would want to grow a bushel to pick twelve large ones from.

Red Ashleaf.—A good cropper, capital for exhibiting, but requires keeping a month or two before it is good to eat, and when boiled is too white-looking in the dish. Nevertheless, it is a good Potato, as it will keep as long as the late kinds and takes up very little room, being very short and close in the top.

Lemon Kidney.—A splendid-eating Potato, and looks a beautiful pale yellow when boiled; produces a great many at a root, but rather inclined to the disease if grown upon a wet soil. Altogether a superior early Potato, and just what judges like; a Potato fit for a gentleman's table.

Jackson's Seedling.—A capital Potato. I have taken prizes with this for both rounds and kidneys, and when digging roots up part of them will be quite round and others kidney-shaped. One or two of the judges in this neighbourhood say they are not good-eating, but I always found them good; perhaps the soil made the difference.

Myatt's Early Kidney.—A first-rate Potato for every purpose, especially for exhibiting, as nearly all of them are of a good shape. It is a good cropper and very early—nearly as early as the Lemon Kidney, but a better shape.

Sutton's Racehorse.—A first early kidney, a certain cropper, and capital eating, and one of the earliest grown; very similar in shape to the Old Ashleaf.

Early Handsworth.—A very early Potato with a very short top and good shape, round; but you cannot eat it, so who will grow it? If any one likes a Potato very waxy, this is the one for his taste.

New Golden Seedling.—A very superior eating and looking Potato, round-shaped, very early, and good cropper, with very dark foliage. This is all the first early Potatoes I grew last year.

The King.—Second early, a great cropper upon good land,

capital eating; the best for exhibition purposes for either round ones or kidneys, as they grow both shapes, some being as round as marbles, others good-shaped kidneys, both at the same root; a beautiful straw colour when boiled. This Potato took the first prize at every show I sent it to, including the Crystal Palace in 1861, for the best twenty Potatoes in the Show, first at Birmingham this last year, first for the best twelve kidneys at the International, South Kensington. They were also in two collections I had there that gained one second prize and one extra. This capital Potato was a seedling from the

Fluke raised by Mr. Spencer, of Hartshill, now living at Offley House, Eccleshall, Staffordshire. He has a lot of seed to spare. I sent all I had to Sutton & Sons, of Reading.

Webb's Imperial.—A good second early, a good cropper and eater, but very much inclined to take the disease; very long tubers; good for exhibiting.

Lapstone Kidney.—Second early. A very handsome tuber, splendid eating, but shy cropper, and very much inclined to take the disease.

Flour Ball.—Round, second early, a good cropper, good-eating white Potato, but the eyes too deep for peeling.

Bell Kidney, or *Second Early Ashleaf*.—A good cropping and eating Potato, but grows too many small ones, and the bulbs very much thicker at one end than the other.

Queen of the Flukes.—A late Potato, very similar to the Fluke, but better in shape, with pink marks at each end. This is considered by several Potato-growers to be the best eating of any of the kinds, quite superior to the Fluke; it is capital as an exhibition Potato. This was reared by Mr. Spencer with the King.

Red Regent or *Holland*.—A red round Potato, an immense cropper; indeed, it will grow a good crop where the Fluke would fail. It is a handsome Potato, and good for exhibiting; but when cut through some of the tubers are red all through, and when boiled are nearly black, so that it will not do for a gentleman's table. Nevertheless, it is a capital Potato for cottagers, as they do not mind the look as long as the tubers are good to eat.

Millet's Manifold.—A capital scarlet Potato, good for exhibiting, eating, and cropping; kidney-shaped.

Wellington.—A capital round Potato, but the eyes are rather too deep for peeling without waste.

York Regent.—A capital-eating round Potato, but very subject to the disease; rather a shy cropper for a late Potato.

Scotch Cups, *Farmer's Glory*, *Pheasant Eye*, *Bread Fruit*, and several others I grew, but found them too coarse to need description.

"UPWARDS AND ONWARDS" makes a mistake when he says the Rev. Mr. Stevens, from Reading, sent the King and Queen of the Flukes, for I believe I was the only exhibitor who sent them to Kensington. Mr. Stevens sent Webb's Imperial or Incomparable, and took the second prize, while my Kings gained the first for the best twelve kidneys.

I think, if I remember right, "UPWARDS AND ONWARDS" could not tell which were the best Potatoes out of the great quantity he saw. Did he notice Mr. Robinson's first-prize collection? There were twelve splendid-looking Potatoes named the Melbourne Hero. I liked these the best in the Show; indeed, I never saw anything like them before, as far as appearance went. I wish I had some of the kind. They were kidneys, and looked like second earlies. Next to these I thought my Kings were the best; but a competitor always likes his own the best.

I have received a schedule of the Royal Horticultural Society's Shows for this year, but there are no prizes for vegetables. Why is this? The Exhibition in October last must have answered.—J. CHOYCE, JUN., *Harris Bridge*.

FLUE-HEATING.

HAVING during the last autumn built a vinery and orchard-house, heated by a flue, I think I may be enabled to help the amateurs who, like myself, have been afraid of the expense of hot-water apparatus.

My house is a lean-to, 40 feet long and 15 feet wide, divided in half by a glass partition, the half nearest the fire being the vinery. The flue goes from the back through to the front of the house, within 5 feet of the glass, then turns along the front to the glass partition, and takes a slight curve to within 5 feet of the back wall of the orchard-house. In this house I have two

chimneys, one going from the curve mentioned before, the other in the far corner of the house, so that I can either have heat or not in the orchard-house, by allowing the smoke and heat to escape by either the one chimney or the other. My flue is formed of single brick walls $4\frac{1}{2}$ inches wide, 12 inches deep inside, 14 inches wide, covered by fire-brick covers, notched, to prevent any escape of smoke through the joints. The expense of the flue was, bricks and mortar, 20s.; cover, 20s.; labour, 10s.; showing a cost of 50s. My fuel costs me 2s. per ton, or with cartage, 1s., 3s. On the 19th of January I had in two tons, of which about 5 or 6 cwt. remain.

My Vines are showing fruit, so that you see I am enabled to keep up a good heat at a very small cost. I have five Vines planted in the border, and five more in pots, besides some Orange and Fig trees, bedding plants, &c. Another mode of heating which I feel certain will prove very good and cheap, is on the principle of hot water, but actually by hot air. We have it at work in our manufactory, and we find it heats a very large structure very effectively, and dries-off our goods in a very efficient manner. The principle is this:—In the furnace or fire-place a large cast-iron pipe is fixed, so that the fire plays all round it, and heats it thoroughly before going up the chimney. One end is open to admit the cold air, to the other end earthen pipes are attached, taking the heated air in any direction you desire, the circulation being as true with air as water, but only requiring a flow-pipe, and not a return one, causing a first-rate circulation in the house; and by keeping the earthenware pipe (unglazed) damp, you can have any amount of moisture you require. The heated air contains no impure vapour, as it is not at all unpleasant to stand in and breathe it, even at a high temperature. The cost is also very little, as the six-inch pipe we can supply at 9d. per yard, and the nine-inch at 1s. $1\frac{1}{2}$ d. per yard, at the works, or deliver them 100 miles at a very small additional cost, in two-ton lots. I shall be happy to give any further information that may be required, or to register the heat I keep, and my consumption of fuel. In my orchard-house, which is full of trees—Pears, Apples, Plums, Cherries, Peaches, and Nectarines, of various sorts, I am also forward, but as many were only maiden plants I cannot expect very much fruit; but the few fruiting trees I have look very promising, Peaches and Nectarines being in full blossom, and Pears and Cherries in bud.—E.

MICE DESTROYERS OF CROCUSES.

FRIENDSHIP BETWEEN A SPANIEL AND MOUSE.

SEVERAL letters have appeared in your Journal on the destruction of Crocuses, &c., by mice, and I have no doubt of their committing the depredations, for I have had mine destroyed by them. It is astonishing the numbers of these animals I have had in my garden, for the three cats I have have destroyed scores of them, and as they do not eat that species, they leave them on the walks and grass plat in front of my house, yet I frequently find five or six on opening my door in the morning. They are difficult to catch in traps, as they will not take any bait that I put for them; but my gardener has caught a great many by placing the traps in their runs in the turf pits and orchard-house and covering the trap with grass, leaves, &c. I have suffered in the same way as your correspondent "R. F.," having had a Sweetwater Vine bitten off by them close above the ground. They have also eaten the large roots, so that it is quite destroyed. I have had a very strong solution of Gishurst applied repeatedly to the other Vines to prevent the mice destroying them.

I may mention a curious circumstance relating to a common house mouse, which has made its nest in a corner of the standing in the stable where a large spaniel dog is tied-up, which protects it from the cat, and which yesterday flew at the cat that was just about to catch it. The mouse was protected in the same way last year by the dog, under whose protection it brought up its young ones, and it is about to do the same again.—R. C. B.

[Our correspondent is a physician, and old subscriber to this Journal.—Eds. J. OF H.]

TRADE CATALOGUES RECEIVED.

W. Paul, Waltham Cross.—*Spring Catalogue of New Roses, Hollyhocks, Gladioli, Pelargoniums, &c.*
Sutton & Sons, Reading.—*Farm Seed List for 1863.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

A DISTINGUISHING feature in this department is its uniformity; straight lines and angles meet the eye in every direction, and whatever may be said in favour of a departure from this rule in the disposition of pleasure grounds, it is universally allowed that straight lines are best in the kitchen garden. Straight walks, with their edges neatly kept; seed-beds of a uniform width, with the seeds drilled in at equal distances; the disposition of plants in rows; trees all trained with the greatest exactness; together with continual surface-stirring, and the consequent absence of weeds, are amongst the distinguishing characteristics of a well-kept kitchen garden, and the most strenuous exertions should now be made for the attainment of such results. Sowing all kinds of seeds should be proceeded, with as directed in our last; the weather during the week has been so cold that little advance since then has been made. The ground, however, is in excellent order for planting and digging, which should be finished without delay, and groundwork in general completed. *Asparagus*, top-dress the beds, taking care not to injure the plants with the rake or fork. A little Celery or Lettuce seed may be sown over the beds. *Artichokes*, *Globe*, they should now be dressed, superfluous shoots removed, and fresh plantations made if required. As this is generally a permanent crop, the ground should be well prepared by deep trenching, and a plentiful application of rich manure. *Beet*, may be sown in drills a foot apart. *Broccoli*, make a sowing of Grange's Early White. *Cabbage*, plant-out autumn-sown, and weed beds left for Coleworts. *Capsicums*, sow on a hotbed. *Cauliflowers*, give attention to the plants under hand-lights by surface-stirring and giving air on all suitable occasions; tilt the glasses on the side away from the wind in cold windy weather, and remove them altogether on the first occurrence of genial showers. Do not let those in frames, or the young seedling plants that are now pricked-out, suffer from exposure to the cutting east or north-east winds, so prevalent at this season of the year. *Peas*, continue sowing for succession crops; earth-up and stick those already up as they require it. *Potatoes*, plant for the principal crop while the ground continues in good working order. *Sea-kale*, cover-up for a succession; fermenting substances may soon be dispensed with for this purpose, as it will merely require to be covered for blanching. *Spinach*, when picking over the autumn-sown, if they were left standing rather thickly together, it is as well to remove every alternate plant entirely, as it will give a greater facility for stirring the soil, and induce a larger growth in those left standing. Sow Turnips, Carrots, Leeks, Onions, Parsley, small salad, and pot herbs.

FLOWER GARDEN.

The rockery is a beautiful and pleasing addition to this department. Many, even small, places will admit of forming an imitation of rocky surfaces where they can be made to harmonise with the surrounding objects; and if the outline be simple, and the surface not too much broken, the following plants, suitable for such situations, will produce a very good effect:—the different species of *Alyssum*, *Arabis*, *Astragalus*, *Iberis*, *Draba*, *Saxifraga*, *Sedum*, the dwarf species of *Campanula*, *Dianthus*, *Veronica*, *Saponaria*, with *Phloxes* of dwarf habits. Vacancies should now be filled up in the shrubbery-borders. Plant-out *Pentstemons*, *Phloxes*, *Lysimachia*, *Delphiniums*, *Lupines*, *Sweet Williams*, *Antirrhinums*, *Clove Carnations*, *Anne Boleyn Pinks*, *Brompton Stocks*, and double *Wallflowers*. Sow a collection of half-hardy and hardy annuals on a warm border, and sow some *Sweet Peas* in pots and in the open ground.

STOVE.

Complete the shifting of all specimen plants as quickly as possible, and keep a sharp look-out for insects. Let 60° be the minimum temperature for the future, except the weather be very severe. Keep a brisk, growing, moist temperature during the day, and shut-up early.

GREENHOUSE AND CONSERVATORY.

If not already completed proceed vigorously with the shifting of plants, and if they are well rooted and in good health do not be afraid of giving them a liberal shift. See that *Ericas* and *Epacris* do not suffer for want of water. While the variable weather which usually characterises March continues, attention must be directed to the conservatory, that a uniform and moderate temperature may be preserved. The violent showers and boisterous gales, which frequently occur at this season, succeeded

by intervals of mild weather and bright sunshine, render some management necessary. Fires should be dispensed with as much as possible, and air admitted on all favourable occasions. On still nights the house may be damped and the syringe used, and as the plants exhibit vigour atmospheric moisture may be increased generally.

FORCING-PIT.

Introduce fresh plants for succession as fast as others are removed to the conservatory. Pinks which have trussed-up will be better in a mild heat, and Lily of the Valley should be removed to a lower temperature as soon as the first flowers are open. Keep a brisk growing temperature, with plenty of air and moisture in clear weather, and avoid crowding the plants as much as possible. Stop the barren shoots of *Perpetual Roses*; these rob the blossom-buds. Take care that no plants suffer for want of water.

PITS AND FRAMES.

Keep a nice growing heat in the cutting-frame; if the linings are becoming cold turn them to the bottom, and add some well-fermented dung. There will now be some empty frames to dispose of. Make up some beds of well-fermented leaves a foot longer and broader than the frames, and place these upon the beds when finished. They will be required for the reception of potted-off cuttings. Take those cuttings out of the cutting-frame that are well rooted, and place them in a cooler atmosphere to harden-off. Continue to put in cuttings of those plants previously recommended.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE change in the weather has come quite opportunely, as it will help to keep many things back that otherwise would have been injured by a slight frost. Used frosty mornings for wheeling, and during the day turned over soil intended for Parsnips, Onions, &c. Dug and trenched over empty ground. Dug ground intended for general seed-bed, so as to sow Greens, Savoyes, &c., about the end of the month. Planted out succession Cabbages, and a row or two of Red for pickling, and continued the routine much the same as last week; sticking a small handful of dry hay into the heart of the Broccoli just coming in; protecting Radishes, &c.; planting out forced Sea-kale; putting a few warm leaves over that out of doors, and some hand-lights over Rhubarb.

FRUIT GARDEN.

Proceeded with planting, root-pruning a few Plums that were making too strong wood, and looked out for protecting material for Peaches and Apricots, if the frost should prove too severe. Had, also, some large boughs of evergreens in readiness to place round forward Pears, if the frost should be more severe. Proceeded in fine days with nailing and tying. Grafting should also be proceeded with as the sap moves. In the case of Vines, all grafting should take place before the sap moves at all. If not done then, the operator should wait until the foliage is expanded, and then either cut down and graft with an unstarted scion, or bring a growing plant and inarch on a young shoot. The modes were fully detailed some time ago. The chief point in all such matters is to unite the inner bark of the stock and the scion, the modes of doing so are of less importance. This is about the best time of the year for grafting all sorts of trees to be grown in the liliputian form; and if the stocks have been previously established in pots, and these when grafted are set in a mild hot-bed, the union will be all the sooner effected. Put up beds for Melons; will in the meantime fill them with cuttings of various things. Shut up orchard-houses in these cold nights, but opened them early, not only to give abundance of air, but to keep back as much as possible, though some of the trees are in full bloom. Trees on the walls left unnailed, and hanging from the wall, will, as yet, be in no danger. At this season much of the success will consist in retarding, rather than accelerating, before the trees come into blossom. After that the more sun we can give the better it will be on ordinary occasions.

Some correspondents cannot see through this so as to use their protecting mediums to the best advantage. Our practice would depend entirely on the simple principle that the later that such trees—as Peaches, Apricots, Cherries, Plums, Pears, &c., bloomed in our variable climate, the more likely are we to have a regular crop; as many of these when they bloom early and even set well, have the fruit destroyed in the young state;

when if they had been a fortnight or three weeks later all might have been well. Suppose, then, that an amateur has a piece of sheeting over a favourite tree, as soon as the buds begin to swell freely, the sheeting should exclude the heat of the sun by day, and be removed at night so that the buds may be chilled. Of course, if the frost be so severe as to injure such buds—say 10° to 15° , then the cloth should be on night and day. With only a few degrees of frost, until the buds of the flower are sufficiently open to expose the parts of fructification, the cooler the trees are kept the better. Two advantages are thus gained—the trees will bloom later, when the weather may be supposed to be milder, and then when they do bloom the earth will be warmer, and there will be more of a reciprocal action between roots and branches. From the time that the bloom opens our tactics must change. The more light and heat in a moderate way the blossoms then receive, the better will the fruit set and swell. We say in a moderate way, for after a frosty morning, if the sun is exceedingly bright, its force against the wall would be so great, that shading for a couple of hours in the middle of the day would be highly serviceable. If the frost has been so severe at night as to touch the young fruit at all, the trees should be shaded all the next day. In ordinary circumstances, however, when there is only a little frost, or a keen east wind, the trees should be covered at night, and only uncovered in the morning when the air becomes genial and warm. The weather must, therefore, regulate the times of covering and uncovering. In a fine genial morning in March and April, after the trees were in bloom, we would uncover early and cover up late at night. In such circumstances as to bloom and a cold wet day, we would keep the cover on night and day to keep the blossom dry. In a cold east wind with but little sun, we would open a few hours in the hottest part of the day. As already stated, before the blossoms open use covering for retarding.

All fixed coverings—be they branches, or nets, &c., have the disadvantage that a degree of weakness is induced that renders the plant less able to contend with extremes. So much is this the case that some of our best gardeners, if they cannot obtain stout moveable coverings, will use none at all, as fixed coverings they contend do as much harm as good. We do not go that length, as even a fixed covering of laurel boughs or spruce branches has saved the crop of one half of a tree, whilst the fruit on the other half was lost. The best gardeners often cannot in these matters do as they like. In one place no resources are wanting. In other places it is expected that the gardener shall secure fruit without an extra farthing of outlay, just as the Israelites were expected to make bricks without the necessary materials. After having tried many schemes with more or less success, we would recommend to all amateurs a stout material, such as sheeting, to be moved easily as necessary, as the best; and next to that, as fixtures, we would designate hexagon netting and woollen netting, because they allow light and air to pass, secure a certain amount of shade, throw past the most of heavy showers, and thus, in addition to mitigating the force of the frost, enable the flowers to stand more frost from their comparative dryness. In fact, we think all modes of protection better than none, but the superiority will much depend on the care used and the consideration given.

Changed and watered *Strawberries*. Was obliged to protect *Strawberries* in pots in the open air, as within these few days they have had more frost than they would have had all the winter, so that our previous protection, without protection now, would have done more harm than good. If *Strawberry*-pots are now frozen as hard as building bricks, be sure the fruiting will be apt to suffer. If plunged in the ground the roots will suffer little injury; if standing on the surface and thus frozen, both buds and roots will be injured. We sometimes meet, in the garden of an amateur, with valuable plants standing in pots out of doors exposed to all weathers. A great point would be gained could such kind readers be made to see, that if plunged in the ground or planted out, such a plant would be more safe than in a pot above ground and not protected. The idea seems to prevail that a nice new plant, almost or entirely hardy, is better kept in a pot than plunged or planted out. Such friends altogether forget the degree of cold the roots of such a plant are exposed to in a frosty night, by radiation of heat and evaporation of moisture from the sides of an exposed pot. Had we such a good society for plants as the one for preventing cruelty to animals, we should see less of pots exposed out of doors in winter with plants in them. For such matters, and all about budding and grafting, we would wish all amateurs with a spice

of enthusiasm, to invest 3s. in the "Science and Practice of Gardening."

Finding there were still a few of the black fly in the Peach-house, fumigated leaves and fruit with capsicums and bruised laurel leaves, and then with a couple of Neal's pastils, which have made them disappear at present. It is best not to confine such operations to one material, but to vary it, and always to be sure not to use the smoke too strong. It is better to repeat the process after a day or two of interval. For a lean-to house 10 feet at back, 10 feet wide, and 50 feet in length, two pastils well smothered, and about 6 ozs. of shag tobacco, are separately enough at one time. It is quite easy to use such a dose as will destroy every living creature, but then it may be easy to destroy the plants likewise. The strongest dose of smoking will not destroy the eggs, and of these there may be thousands; and, therefore, if ever a colony is formed, there is not only the necessity of killing what is alive but of doing for others as they come into existence. Such matters are apt to make gardeners rather cruel-hearted on the vermin, though no class of men, as a whole, are more kindhearted. "Give a thorough good dose and have done with it," is by no means sound advice. I once saw a beautiful house of Peaches just nicely set, and the swelling fruit throwing their embracing blossoms off. A few green fly appeared, and it was ordered to be smoked. Next morning after a good syringing, some flies were to be found alive, and an extra dose of tobacco smoking was decided on for the next night, and some poor fellows were shut up in the nocturnal atmosphere blowing away with bellows at the tobacco retorts, until on opening the door the gardener was pretty well knocked down with the aroma that saluted him, and then there were orders for the operators to come out, which they did, almost as stupid as if they had been lolling in an opium-eater's paradise. And did they kill all insects? Yes, we believe, every one that was then alive; but there were plenty more during the season, and a sickly vegetation during the year, and what I want to note more especially is, that by the second day there was scarcely a fruit in the house; but all the little set fruit were strewed over the floor as thickly as if you had meant to sow rows of Peas. From that day to this, though forced at times to use smoking and washing moderately, we have great faith in the "Weaver remedy," of "catching them and killing them," and if the remedy is applied soon enough, people will be surprised what the fingers and thumb can accomplish.

Drew a dry hand over bunches of Grapes in bloom, especially Sweetwaters, in order to assist the setting. We observe this plan is recommended in some of our contemporaries now, though it is now many years since we first alluded to it, and found that the hand dry and applied gently along the bunch, was far better than any camel-hair brush, or anything of the kind. Some good people, however, must amuse themselves longer in seeking for a tool, than with the best of all tools, the human hand, they might do the job five times over. In some Grapes the calyx rises and covers the parts of fructification so tightly that they cannot perform their functions; but a slight rub with the dry hand, especially in a sunny day, removes the hoods and sets the pollen free to act on the pistil of the flower. By this means and a little care to give extra heat, Muscats may be set as thickly as Muscadines. Gave a little water to Figs, not too much at once, because extreme dryness and extreme moisture at once would be apt to throw off the incipient fruit. Those out of doors are still covered with laurel branches.

PLANT DEPARTMENT.

Fresh-packed some Orchids in baskets; placed some Ferns in a state of rest, as Maiden-hairs, into more heat. Fresh-potted fine-leaved Begonias, shaking most of the soil away, and repotting in similar or smaller-sized pots, using light, rich soil, packing it close, and placing the plants under the shade of Vines on a stage. Potted and put in cuttings of Coleus, and other softwooded stove plants; placed Gloxinias in heat, to start them before shifting them; put tubers of Achimenes and Gesneras into pans to start them before separating and grouping them in pots for blooming. The Achimenes may be set rather thickly in pans and boxes, covered with half an inch of sandy soil, and when 2 inches in height selected for potting and vasing. They start best under shade, as then the sun will not injure the young foliage. When such things are started in a hotbed, not only should the bed be sweet, but there should be a little air left on at top all the night, as well as during the day; for condensed moisture or steam from such beds is apt to scald the foliage,

and rarely does it recover its beauty again. In such a place the young leaves should be quite dry before the sun strikes them.

Melons in pots should not have less than from 65° to 70° average night temperature, and Pine plants for autumn fruiting should now receive their last shift, and care should be taken whilst the bed is preparing for them, that the plants are not chilled. We have seen plants throw up pigmy fruit prematurely, or a lot of suckers instead of a fruit-stem, from such checks being given to the roots, merely by allowing the plants to stand about in the cold; and because the plants do not show the effects of such treatment as readily as a Cucumber, or an early Balsam, we are too apt to imagine that they may be treated roughly with impunity. It is from thoroughly understanding this hot-and-cold affair that many things look so nice in small places. The gardener there, doing the most particular matters with his own hands, will take care that his plants receive no check. No sooner is a plant out and shifted, than it is back again in its comfortable home; but in large places you may often find numbers of plants in a cold shed at dinner time. The young people cannot be made to feel how grievously they injure their plants, in thus bringing them to a temperature of from 35° to 40°, when taking them out of and back again to one of 70°. When this is long continued, all the coaxing and warm-watering afterwards will not compensate for the serious check thus given.

Reported Fuchsias that had been pruned and started, shaking away a good portion of the old soil, and filled up with fresh rich loam. Placed Dahlias and Cannas on the floor of a house to start them, bringing both from sheds where they had stood the winter. The weather being so cold, delayed planting out bedding plants under temporary protection; but filled every little available space with cuttings of Verbenas, double Feverfew, Geraniums, &c. Made preparations for sowing lots of flower-seeds, and rolled the lawns and pruned the Roses in flower gardens; also put in Rose cuttings.—R. F.

TO CORRESPONDENTS.

HACKBERRY TREE (W. D.).—The following extract from Hogg's "Vegetable Kingdom" gives the information you ask for:—*Cerasus padus*, the Bird-cherry or Hag-berry, is common in most parts of Britain. The fruit is naceous, but infused in gin or whiskey greatly improves them, and is only surpassed by an infusion of Peach leaves." We may add that *Hag*, or *Hæg*, is the Anglo-Saxon for the Hawthorn, and the fruit of the Bird Cherry is not unlike the Haw.

VEGETABLE AND GOURD SNOW (J. Choyce).—We believe that the Royal Horticultural Society do not intend to have a show of this description like that they held last October.

CALANTHE VESTITA (Orchidophilus).—Be assured that no discount was intended. We only remember that we considered the notes of Mr. Appleby at page 90 gave the information you needed. If it does not, send your questions again to us.

GALVANISED IRON WIRE FOR TRAINING (J. McClellan).—The galvanised wire will do very well. The shoots must be tied loosely.

ACHIMENES DYING (Idem).—The Achimenes in theinery might not be ripened enough. The roots, however, whether in-doors or in houses, should rarely be in a temperature lower than 45°. A little frost injures even well-ripened buds of Achimenes.

GLASS FOR A SMALL LEAN-TO GREENHOUSE (J. P.).—If the roof is to be fixed, and the place at all exposed, it would be desirable to have British plate, seconds or thirds, 21 ozs. to the foot, and the squares 12 inches deep and 15 inches across. If the place is protected, squares 12 by 20 would do, and 16 or 15-oz. glass would be nearly a third cheaper. If sashes are to be made, then we would propose glass 10 inches wide, and 18 inches long.

LIFTING VINE ROOTS (An Old Subscriber).—As you have taken up the Vines now, place over the border a foot or 18 inches depth of warm fermenting stable manure, so as to raise the temperature of the border, 4 inches below the surface, to 75° to 80°. Keep the Vines in the house as cool as possible until they break naturally. By that time there will be roots making to sustain them.

NERIUM FLOWERS FAILING (Idem).—Place your Neriums in a sunny place out of doors after June. Water plentifully until September. Thin-out head if too thick. Do not shorten any of the shoots you leave. Give all the sun possible in the autumn, and no more water than will keep from flagging. Pot in rather stiff loam. Take them into the house in October.

PLANTING A FLOWER GARDEN (P. M.).—Were we to plant flower gardens on paper, we should require several first-rate flower-gardeners almost constantly employed. We are not able to do that. We will gladly give hints on proposed planting. Your arrangement of last year was not only simple, but very good. It is desirable to change the beds, and if you send us your own re-arrangement, we will refer to the plan and tell you our opinion.

RHODODENDRONS NOT FLOWERING (Ada).—We can only suppose that your plants were starved last season if they made no new wood. Of course, if they did not do that they could make no flower-buds. Examine the roots. See that the ball is moist to the centre. If the pot is full of roots, repot into two parts peat or heath soil, and one part of loam, with sand and charcoal. Keep in the conservatory until June. Syringe and keep close to encourage growth; then set in a shady place out of doors, and by August place pretty full in the sun, mulch with rotten old cowdung, and give plenty of water. The sorts you name will do pretty well out of doors in a sheltered place.

SOWING CLIANthus DAMPIERI SEED (An Original Subscriber).—Soak the seeds in water at 140° for some hours before sowing; then place the pot in a mild bottom heat, and cover but slightly. We would advise you to take out those you have sown, sow afresh, and treat thus—nay, further, we would put a single seed in a small pot, and take to a cooler place as soon as the plant is up. You may then transfer the plant before the pot is full of roots to a larger pot. If you had a pot of seedlings they would suffer in shifting, as the plant is touchy in enduring moving.

PELAGONIUM CULTURE (L. F. F.).—Water must be given to all plants just as they need it. In a sunny week they will want water, probably, every day, or every other day, according to circumstances. In dull weather water may be needed once a week, or once a fortnight. Your Geraniums you must treat according as you want flowers from them this season, or fine specimens in the following year. In the first case place the plants where you can command the fire heat. When they have got over the journey repot into larger pots—say 6 inches. Stop the shoots that are too strong a fortnight afterwards, and then these will flower in the end of summer. If fine plants are your object, stop all the shoots, pot in a fortnight, begin to train, and pot once or twice during the summer, but not after August or September. These will make nice early plants next summer. Let the temperature be from 45° to 50° at night in average weather, from 50° to 60° in dull days, and 10° more from sunshine. Buy "Window-Gardening for the Many," you can have it free by post for 10d. from our office.

FLUE-HEATING A GREENHOUSE (Wisbech).—Of course you lose a little heat from the top and only one side of the flue being exposed; but the top alone being exposed ought to be sufficient for such a small house if the flue is 9 or 12 inches across. We presume that the flue is almost a dead level in the house, but it would have acted better if it had risen a little from the place where it is connected with the furnace right on to the chimney. If the flue is quite level the chimney will require to be higher. There is one thing you omit—the furnace, and it strikes us as very likely that your furnace-bars are not low enough. If not many inches below the bottom of the flue, sink the bars low enough to be 24 to 30 inches below the level of the bottom of the flue. Our opinion coincides with that of our coadjutor Mr. Robson, that for all such single small houses a flue is preferable in every way to a boiler. The expense of heating such a place with a boiler alone will be much more than with a flue, as so much heat will be lost up the chimney by the first mode. And then, as for economy, you will have a small boiler, the heat will be more irregular without considerable attention, as when the fire is out the heat is soon gone; whereas, when a flue is heated it keeps its heat a long time. We would, therefore, advise the flue so far as effectiveness and economy are concerned; and we do not see why it should not draw. We should be glad to know if the hint above is of any use, and if not you may give us more particulars.—R. F.

FLOWER-GARDEN PLAN (W. B.).—We never undertake to plant. All that we can do is to criticise the planning proposed.

RHODODENDRON AUCKLANDII, &c. (W. Brown).—Sir W. Hooker ("Botanical Magazine," t. 5065), speaks of it as "magnificent," and "in some respects the finest of its genus." It flowered in this country for the first time, we believe, at Mr. Gaines' Nursery, Wandsworth, in the May of 1858. We know of no reason why it should not interbreed with *Rhododendron cilicium*.

MONOCHÆTUM (Idem).—This name is derived from two Greek words, *monos*, one, and *chaite*, a bristle; the connective of the anther being lengthened into a kind of bristle.

NAMES OF PLANTS (F. J.).—We cannot name plants from leaves alone, except in rare instances. 1 is an Echites; 3 appears to be *Cytisus filipes*. (*W. H. M.*).—*Chorozema cordatum*, (*Novice, Gorey*).—1, *Pleopeltis lycopodioides*; 2, *Phlebodium acroleptum*; 3, *Cyrtomium falcatum*; 4, *Pteris hastata*. (*An Amateur, Co. Tyrone*).—*Cyclamen com* is all right. *Polygala Dalmaniana* is a British-raised hybrid, requiring the protection of a window or a greenhouse in winter. You may prune it back when done flowering. The small shoots will strike in peat and sand, with a bell-glass or a hand-light over them. If you allowed a little seed to ripen, and sowed it in a pot in the window, that would be the easiest plan of obtaining plants. The plant will be safe enough out of doors from June to the middle of October. You are all right about the Auriculas.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

ECCENTRICITIES OF THE WORCESTER AND BATH AND WEST OF ENGLAND

POULTRY SHOWS.

I RECOLLECT hearing a story once of a lady ringing for her servant to sweep the floor after some of her visitors had departed, declaring that these same visitors had dropped so many H's, that the carpet must be strewn with them. Taking up the Worcester schedule makes me fancy that some kind friend with the dust-pan is needed, to raise up some of the classes which have dropped unheeded by the tender mercies of the Committee.

We are supposed to be living in the year 1863, when shows are no longer in their infancy, and when exhibitors expect, and have a right to expect, a different prize list. I am one of those who think it rather questionable whether the entries, being similar in amount, it is altogether justice to the exhibitor to have prizes varying in amount. If you take any catalogue and make a proportion sum—if Dorking entries receive such an amount in prizes, Malay entries should receive so much; or take any other breeds. I do not think that it always holds that those classes for which, if I may so call it, extra prizes have been offered fill in proportion to those prizes, whilst often it is palpably the opposite. Take Devizes, where, as some of your readers may recollect, I took down a few notes. There £5 5s. offered

to Spanish and coloured Dorkings produced respectively ten and fifteen entries; whilst £2 offered to Polands (any variety), produced six, and the like amount offered to Brahmas produced six. Some of the Bantams and Buenos Ayrean Ducks far outstripped this number; yet each had paid an entrance fee of 6s., and the Dorkings and Spanish paid no more. At the same Show sixteen pens of Cochins had £9 divided between them; yet these only paid the same entrance fee.

But to return to the schedule of the Worcester Show. Where are the classes for White Dorkings, Malays, and Brahmas? All of these breeds expect classes at "grand" shows. Why are White-crested Black Polish chickens to have prizes, while the aged specimens may take refuge in the Any other variety class? In my simplicity I believed that Polish adults were handsomer than chickens. Why are Black East-Indian Ducks classless? Wherefore are spangled Hamburgs cut off from a third prize in each class, whilst their brothers and sisters, the Pencilled, have three? At the Crystal Palace Pencilled produced, omitting single cocks, thirty-nine pens, but Spangled forty-four.

In exchange for these sins of omission, we have Worcester setting us the bright example of separate classes for Crève Cœurs. These birds, which one of your correspondents lately denominated degenerate Poles, have yet to prove their merits. I cannot say I was over-pleased with the specimen I once kept, but this may have been an exception. But surely these birds should not displace other well-known and useful breeds from the class list.

I fancy, too, that some exhibitors will ask where their birds are to be kept for one whole week. Every place for exhibitions of poultry is not the Crystal Palace, and in hot July too! Two days are sufficiently long for any show except the really "grand" ones—Birmingham and the Crystal Palace. The Committee should recollect that the poultry are not cattle, and that they cannot stand the confinement in the same way.

I have written you at once, as there is plenty of time for the Committee to alter some of their plans. If they do not, I fear their Show will not prove so successful as they doubtless imagine.

Turning to the schedule of the Bath and West of England Poultry Show, I find no classes for Gold or Silver Polands, none for Brahmas; Gold and Silver-spangled Hamburgs massed together, while their Pencilled brethren enjoy their two classes.

To deduct 3s. 6d. from each entry in the sweepstakes for single cocks seems monstrous. Surely there must be some error here.

Last, not least, it is a five-days Show, the birds being cooped about seventy hours before the Show commences. Altogether, many valuable birds—if their owners are simple enough to send them—will be cooped-up for ten days or more, journey included!

Will one of the latter rules prove a "soothing syrup" to them? It runs—"In case of the death of any poultry during the time of exhibition, the bird or birds" (very cool) "so lost will be sent back for the inspection of the exhibitor." Great satisfaction may it give him, especially if the death is from a contagious disease, and the dead and living birds journey home together!—Y. B. A. Z.

[Our experience of the management of poultry shows tends to convince us that there is always a great difficulty to committees in pursuing the exactly midway course that insures entries in due proportion to the appointed prizes on the one hand, and at the same time gives general satisfaction to exhibitors of different varieties of poultry on the other. Each breeder most probably selects for his choice his own particular "hobby," and fancies it the most deserving of support and distinction—in fact, supposes for the time being the breed he then holds superior to all others: hence, on the part of exhibitors, discrepancies must always prevail as to the opinion of which breed of fowls is the most deserving. Committees, on the other hand, are compelled not unfrequently, as expressed by homely phrase, "to cut their coat according to their cloth," and thus are forced to the really unenviable task of a selection among the numerous classes of such breeds as must be among the most limited, as to the amount of premiums offered. Unfortunately, statistics of their previous meetings are not invariably trustworthy to committees, for it frequently happens a class comprising only three or four entries one year calls forth the succeeding season perhaps quadruple that number, for the simple reason that, as the prizes were so easily won formerly, the next trial induces a great number of expectant winners to enter into the competition. This variation of entries seems beyond the power of computation, and thus the number of com-

petitors is altogether conjectural until the close of the time for entries makes plain the matter in dispute. Of course, even committees have their partialities for different varieties equally with the exhibitors themselves; and however anxious to arrange their schedule of prizes to meet the views of all those most interested, they must fail occasionally in so doing.

It should be kept always in mind that any show to be successful must be self-supporting; for the cases in which a voluntary subscription is to be depended on among the non-exhibiting but resident gentry is a most unusual occurrence, and a resource that after a few repetitions speedily becomes threadbare to the very core. After all experiments that have been introduced it seems that equal payments for the privilege of competition, with equal amounts gained by the successful ones in each class, is the most universally-approved arrangement. True it is, at the outset a few (and in some instances very few), pens compete, and the loss to the Society by certain classes is considerable; but, in many cases where the attempt has been renewed, the entries the year following have been so strangely reversed, that in the aggregate of the two years an absolute gain has been obtained.

We think with our correspondent, "Y. B. A. Z.," that the time the birds are detained at Worcester is too lengthy. The fact is, a better and a larger show would undoubtedly be insured had its duration been of a less protracted nature, particularly as chickens invariably suffer more from confinement than aged poultry. We trust, therefore, the Worcester Committee may think well even yet to reconsider this matter, with the view to meet the wishes of exhibitors generally, more especially as their Poultry Show of this season should boast of a very greatly-increased amount of support, on account of its taking place during the time of the Royal Agricultural Society's Meeting at Worcester.]

TAUNTON POULTRY ASSOCIATION.

THIS well-managed and remunerative Society, according to an advertisement which appears in our columns to-day, is "dissolved." This causes us much surprise, because, as some comic character observed on an undesired death, "there was no occasion for it." We are not astonished when a society retires to the catacombs after being ill-conducted, or when it is in debt, but neither of these "occasions" befell the Taunton Association. No secretary could have ministered more satisfactorily than Mr. Ballance; and we see in the printed accounts that there is a small sum in hand.

We do not think that a valid reason for dissolving is "the subscribers having failed to attend the meeting"—a more cogent reason would have been their "having failed to subscribe." Much do we hope that the subject will be reconsidered—that Mr. Ballance will resume the secretariat; and, we think, that subscriptions will increase rather than diminish, if application is made for them, when the threatened extinction of the Association is thus publicly known.

APIARIAN NOTES.

OPEN BEE-HOUSES.

THERE is nothing at all novel in the advocacy of open bee-houses; and if "A. K. H." will turn to No. 10 of Vol. XXIV., page 161, he will see that I have written in favour of them, though in a modified form. It is recommended that the hives should be on separate pedestals, but there is not the slightest objection to a double rail for their support, and in some respects this would be found to be the most convenient plan.

But, surely "A. K. H." cannot have tried the form of open house he has described at page 179, or he would hardly have brought it forward as an improvement on any known method of protecting hives. He would find it, as he has figured it, anything but a protection for his bees. The double tier of hives is fatal to it. To work supers the roof must be at such an elevation above the lower tier that rain must freely drive in at the front and back; and as to the high exposed sides, the hives might as well be out in the open air altogether. I thoroughly detest hives being placed one above another, even if the upper entrances are not immediately over the lower. Let the upper tier be dispensed with, the roof brought down to a proper distance, allowing ample room for supering, and there can be no objection to the plan. But I would do a little more before I should consider my hives safe from driving rain; the ends should be closed-in with some material, such as pieces of old floor-cloth,

matting, or boards of feather-edged deal. With a wide overhanging roof the hives would be thoroughly protected, and I have little doubt that there is no better plan of house or shed for keeping them to advantage. The back of the roof being made to open on hinges is a very great improvement and worth adopting.

Within the last two or three years I have made use of a large aviary about 25 feet long by 8 feet in width. The front is all wirework, the roof wood or galvanised iron; the back, sides, and top being quite closed-in. Having discarded the feathered occupants, it occurred to me to make use of the place as a bee-house. Parts of the wirework were cut away so as to allow plenty of room for the free flight of the bees. This has answered admirably in this place, though if it were not for the wire front the rain would probably drive in too much, as in the centre the roof is at least 16 feet in height above the ground floor. I find one very great advantage in performing operations in such a house—the bees do not readily enter through the meshes of the wirework, but they very quickly make their exit thereby, so that they seldom annoy the operator. If building a bee-house, I should be very much inclined to obtain some galvanised wire netting of very small mesh to form the front, cutting away spaces of about 8 inches by 5 for the bees. This would allow of ample circulation of air; yet be of considerable use in preventing annoyance to the bee-master from his angry subjects.

BEES IN BUILDINGS.

A short time ago I expressed myself rather adverse to keeping hives in buildings or in rooms in dwelling-houses. Since then I have received a letter from a friend giving an account of the state of his apiary, and speaking highly of the success of his experiment in making use of a large glass room originally built for the purpose of taking photographic likenesses. As he is totally unaware of the subject having been mooted in these columns, his opinion may perhaps be the more valuable. I may premise that he is an apiarian of long standing, and of far more than ordinary science and practical experience.

After giving an account of the present state of his apiary, and reporting the loss of most of his artificially-formed Ligurian stocks, he goes on to say, "My great success has been in the driven cottager's bees, formed into stocks last autumn; all these are alive and flourishing. They have been all carrying in pollen from the 30th of January and 1st of February, some of them in large quantities. These are all in my glass room, which really makes a first-rate bee-house. The temperature being equable and the room dry, the hives are earlier than any out of doors in my garden. There are seven stocks now in this room a good distance from each other, and there is less hovering and pitching about of strangers than in the garden. The floor-boards are dry and clean, and there has been no moisture on the windows all the winter. I enjoy this room vastly, and wish there were more hives in it."

So far as it goes this is evidence in favour of placing hives in rooms; but whether they will do well in this glass house for a permanency remains to be proved. I should fear the heats of summer would be very detrimental to their prosperity, and therefore must defer judgment until the close of the next autumn, when I hope we may have further and corroborative evidence of the suitability of such a plan for keeping hives.

BEST ASPECT FOR HIVES.

I do not think a "LANARKSHIRE BEE-KEEPER" can lay down any law as to the most suitable aspect in which hives can be profitably worked. That he is right in his decision that a sheltered north aspect is the best in his own locality or apiary I have no doubt or wish to dispute; but I am convinced that what would be the best aspect in one part of the country would be the worst in another. So much depends on prevailing winds or draughts of air, or the quarter from which most rain may be looked for, that it seems impossible to lay down any rule for absolute guidance.

Considerable attention has been paid by me to this very subject, and I confess that after numberless experiments I am unable to arrive at any fixed conclusion.

At this present moment I have hives facing nearly every point in the compass, and it is extremely difficult to say which are answering best. The finest takes of honey I have ever had have been respectively from east, south-east, south, and due west, and with me there is not much to choose between them; but I should in all cases be guided by what is in the garden, or near

enough to affect the bees by causing rough currents of air, or confining them too closely so as to distress them with a too sultry atmosphere.

My own inclinations rather tend to a south-eastern aspect with the shelter of a building or some large evergreen shrubs on the north at some little distance. If it can be obtained, a large bush on the south which shall in some measure shade the house about twelve o'clock, is always a desideratum, but it must in no wise interfere with the direct flight of the bees. Probably the most populous hive I have this spring, as it also was last year at the same period, is a hive facing due west. For some years past hives on this same stand have been remarkable for going through the winter with large populations, and in good or in tolerable seasons showing considerable returns from their labours.

It is far from my intention to write against placing bees in a north or any other aspect; all that I wish to contend for, is that the aspect most suitable in one part of the kingdom may not be so in another; and even more than that, a distance of only a few miles shall equally influence the judicious placing of bee-hives.—S. BEVAN FOX, *Exeter*.

BOTTLE-FEEDING FOR BEES.

SEEKING the above mode recommended in your columns, I have given it a fair trial this year and the last.

The principal disadvantage I have experienced is often of a morning finding a broad stream of food out from the entrances, and over the landing-boards. At first I concluded that the bottles must have toppled over, or that the double ply of fine cap-net had given way; but on examination the bottles were standing quite plumb and the net all right. Besides the injury this run over the combs and the main body of the bees in the very centre of the hive must cause, this stream externally attracts robbers from the strong colonies to the weak ones most in want of food, and I fear the consequences may prove disastrous. I also find feeding in bar-hives, which the most of mine are, through the narrow space betwixt the bars, a very slow proceeding in comparison to that in straw hives—for instance, where the neck of the bottle can be introduced into the hive amongst the bees. With these exceptions, which I trust some of your many contributors may assist me to overcome, I otherwise think it a vast improvement over all the other systems I have tried.—W. J.

[There is evidently something wrong in your manipulation of the bottle. Either some loose ends of string or net have caused the food to drip into the hive by means of capillary attraction, or the first rush on inverting the bottle has been so copious as to overpower the bees. Test your bottle before again using it, by inverting it filled with water and tied over with cap-net. If after being inverted the fluid remain perfectly suspended all is as it should be, and it will only be necessary when using it to invert it in the first place over the jug or other vessel containing the food, whence it should be carefully and steadily conveyed in the same position to the hive. Bees in bar-boxes may be fed with the same facility as those in common hives, if Mr. Woodbury's plan be adopted of allowing a free passage between the bars and crown-boards.]

BEES IN NORTH-STAFFORDSHIRE.—Pollen-carrying commenced on February 16th, and was brisk on March 1st and 2nd.—A NORTH-STAFFORDSHIRE BEE-KEEPER.

PRESERVING WOOLLENS FROM MOTHS.—The simplest and best way of preserving woollens through the summer from the destruction of moths, is to wrap them well up, after brushing and beating them in cotton or linen cloths. The moth can pass neither. Two covers well wrapped around and secured from the air will be effectual. An old sheet will answer.

OUR LETTER BOX.

DEALER IN ZOOPHYTES.—Can any of your readers recommend a dealer in zoophytes, residing on the coast, who is moderate in his charges? Not a dredger alone, but one who keeps a stock for sale, and is conversant with their habits.—EYESHAM.

WORK ON PIGEONS (*Almond*).—We know of no other work on the subject except those you name.

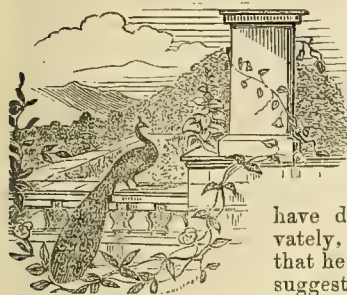
BEES OVERPOWERED BY MOTHS (*S. E., Swaffham*).—We have received the tin box containing a mass of cocoons, which shall be reported upon as soon as any of the moths arrive at maturity.

WEEKLY CALENDAR.

Day of M th	Day of Week.	MARCH 24—30, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
24	Tu	H. Repton died, 1818. G.	29.542—29.454	65—39	S.	.02	m. h.	m. h.	m. h.	5	m. s.	83
25	W	Lady D. Lawson died, 1747. B.	29.472—29.436	63—46	S.W.	.08	54 5	17 af 6	15 0	6	6 11	84
26	Th	Gesner born, 1516. B.	29.500—29.369	56—40	N.E.	.10	52 5	20 6	7 1	7	5 53	85
27	F	Golden Saxifrage flowers.	29.394—29.243	60—43	E.	.18	50 5	22 6	51 1	9	5 25	86
28	S	Chickweed flowers.	29.182—29.115	51—39	N.E.	—	47 5	23 6	27 2	9	5 16	87
29	SUN	PALM SUNDAY.	29.243—29.192	51—38	N.E.	—	45 5	25 6	56 2	10	4 58	88
30	M	Elsholtius died, 1683. B.	29.521—29.288	59—41	W.	.13	43 5	27 6	21 3	11	4 39	89

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 51.9° and 33.6° respectively. The greatest heat, 75°, occurred on the 27th, in 1830; and the lowest cold, 14°, on the 25th, in 1850. During the period 161 days were fine, and on 91 rain fell.

ORCHID IMPREGINATION.



OWE Mr. James Anderson the correction of a misstatement; and as he has reproduced my letter in which the mistake was made, I will correct myself in your pages. I ought to have done so to himself privately, but I was not aware that he was so interested in the suggestion as he seems to have been.

The seed of *Odontoglossum* which he was so polite as to send me was not all barren. Some time after I had written to him the remarks which he quotes I thought I would institute a more prolonged and careful microscopical examination; and the result was that I found a few seeds—perhaps one in five hundred—in which the opaque embryo was clearly discernible in the midst of the twisted, netted, loose seed-coat. I therefore determined to sow it. In doing this I adopted the plan recommended by Mr. Beaton in page 61 of *THE JOURNAL OF HORTICULTURE* for 1862—in which the mode of dispersing the dustlike seeds by floating them on water, which is then let slowly off at the pot-bottom, leaving the seed adhering to the charcoal, peat, and crocks—struck me as beautifully ingenious, simple, and effective. This, then, I did; and the pot, standing in a saucer of water daily replenished and covered by a square of glass slightly tilted, has remained from last October till now, in shade close to the hot-water pipes in the Orchid-house.

Curiosity led me to examine the condition of the pot and its contents often; and the seed had not been sown long before I could readily discern, by the aid of a pocket-lens, the fertile seeds. These manifestly swelled and became of a tender green hue; and as the thin empty membrane of the numerous barren seeds gradually decayed away, the fertile ones were the more distinctly seen, especially on the black ground of the bits of charcoal. I presumed they were going to germinate; but one by one they disappeared, and for some time past I have not been able, with the closest scrutiny, to detect a single seed.

With regard to my suggestion of encouraging the access of bees to Orchid-houses I will add a word. While I still believe it would be found successful in securing the formation of ripe seed by many species that are now unfertile with us, I perceive a strong objection to the practice. It is known that the blossoms wither and die within a few hours after impregnation; and as this, under the free action of insects, would take place almost immediately after they had expanded, our magnificent spikes of flowers, which now adorn the house and fill it with perfume and loveliness for four, six, or eight weeks together, would scarcely last so many days. Only, therefore, in a few cases, in which the obtaining of available seed would be of superior importance to the preservation

of the bloom, would the free introduction of insects be proper. Yet, if once the raising of Orchids from seed could be depended upon as of ordinary plants, I cannot but think that it would soon become of mercantile importance as a source of obtaining specimens far more prolific than those on which we at present depend—viz., the importation of foreign specimens, and the subdivision of such as are in cultivation.

Moreover, as Orchids seem peculiarly liable to variation in the size, colour, and number of their flowers, the raising of them from seed on a large scale might reasonably be expected to yield a multitude of startling novelties, even in those species which, from long cultivation with us and wide dissemination (chiefly, however, by repeated fission of the same original), we are accustomed to consider as sufficiently familiar.

The desire to cultivate these most lovely plants is notoriously increasing, and would spread very rapidly but for the barrier presented by the high prices demanded for them. A great reduction in price would doubtless be the immediate result of an extensive and general production of seedlings. The little plants at two or three years old would be eagerly bought-up if once in the market, and grown on by many a charmed amateur, who would not venture upon the purchase of established plants ready to flower, such as are alone to be bought at our nurseries as yet. Then the interest attaching to the lengthening of the rhizome, the successive formation of larger and yet larger bulbs, the peculiarities of cultivation under such skilful teachers as Appleby and Williams, the watching for the development of flowers, would keep expectation alive; till at length the peeping-forth of the flower-sheath from some plump bulb of *Cattleya* or *Lælia*, the gradual rising of the dark bud within seen against the light, its protrusion, and the expansion of the gorgeous glorious blossom, would be confessed an ample repayment for all the anxiety, all the expense, all the labour. Surely there is a fortune to be made by some young nurseryman who will lay himself out for raising Orchid seedlings, or I am much mistaken.—P. H. GOSSE, *Torquay*.

THE ROYAL HORTICULTURAL SOCIETY'S
SECOND SPRING SHOW.

A FROSTY morning, a dense gloom hanging over the metropolis in the forenoon, and a chilly north-east wind for the remainder of the day, were circumstances by no means likely to be conducive to a large attendance of visitors; still the muster, especially of ladies, was very good, and, notwithstanding the cold and draughty place in which the Show was held, so great was the interest manifested in the flowers exhibited, that it was frequently a matter of difficulty to approach them.

Camellias and Hyacinths constituted the most prominent objects in the Show, but the former were not brought forward in such numbers as might have been expected.

In Camellias, a special prize was offered for the three
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best. This was taken by Messrs. Veitch & Son, of Exeter and Chelsea, with *Valtevaredo*; General Lafayette, bright rose striped with white; and Countess of Orkney, white with rose stripe, the last-named being unquestionably the finest plant in the room.

In Class 1, six distinct kinds, Messrs. Veitch had the first prize for Madame Lebois, a fine imbricated deep rose; *Fimbriata alba plena*; Comte de Paris, a very fine plant and the flowers of a very delicate salmon pink; *Bella di Firenze*; and *Tentonia rosea*. All of these were handsome, well-flowered plants. Mr. Hally, of Blackheath, came second, being in fact the only other competitor in this class. His flowers were *Amabilis*, red; *Carminata*, a blood-red seedling; *Optima*, *Elegans*, Countess of Orkney, and *Imbricata*. Mr. Standish, of Ascot and Bagshot, likewise exhibited in this class, but not for competition, and the varieties which he brought forward were more recent than those in the second-prize lot. They consisted of *Lavinia Maggi*, very fine; Sarah Frost; Duchesse de Berri, a beautiful bluish white; Queen of Beauties, delicate rose, large and very double; *Maestra Rosa*; and *Bicolor de la Reine*, salmon and red.

In Class 2 there was no competition; and in Class 3, which was for four distinct kinds, Messrs. Veitch again walked over the course with handsome plants of *Triomphe de Lodi*, deep blush variegated with rose; *Alexina*, blush striped with rose; *Alba plena*; and *Amelia Benuco*, rose.

In Class 4, a single specimen, Messrs. Veitch were also first with a plant of *Princess Bacciocchi*, 5 feet or more in height and handsomely grown, its glossy foliage setting-off the crimson scarlet flowers to great advantage. The second prize was awarded to Mr. Salter, of Hammersmith, for a very fine plant of *Chandler's Elegans*, which was about 8 feet high, but not so bushy as the preceding.

In Classes 5 and 6, for *Rhododendrons*, there was no competition. In 7, that for single specimens, Messrs. Veitch had *Smithii superba*, a magnificent plant about 5 or 6 feet across and covered with its crimson scarlet flowers. To this the first prize was given; and the second went to Mr. Young, gardener to R. Barclay, Esq., Highgate, for *Rhododendron Blandyanum*, forming a dwarf standard about 3 feet high, and having six trusses of bright rosy crimson flowers. From the same exhibitor also came a plant of the small scented white *Ciliatum*.

The Hyacinths were superb; but the collections of Mr. Wm. Paul, of Waltham Cross, and Messrs. Cutbush, of Highgate, surpassed those of all others, both as regards the size of the spikes and bells and the excellence of the varieties shown.

Class 8 was for eighteen kinds, and here Mr. Wm. Paul was successful in carrying off the highest honours. Among the varieties he exhibited were *Koh-i-Noor*, a new and excellent double sort, with a magnificent spike of a delicate rosy salmon; *Marie*, a purplish-plum; *Duc de Malakoff*, fawn and nankeen, a fine addition to the yellow class; *Macaulay*; *Von Schiller*; *Mont Blanc*; *Solfaterre*; General Havelock; *Cavaignac*, very clear pink, and a broad spike; *Ornement de la Nature*, a delicate pink; *Snowball*, one of the finest varieties known; and *Florence Nightingale*, flesh. *Grand Lilas*, *Grandeur à Merveille*, *Howard* and *Baron von Tuyl* were also very fine. Messrs. Cutbush took second, though not without a close competition. In this collection were *Ida*, one of the best of the yellows; *Haydn*, a very fine lilac mauve; *Snowball*; *Koh-i-Noor*; *Garrick*, double blue; *Seraphine*, blush; *Grand Lilas*; *Duke of Wellington*; *Florence Nightingale*; *Grandeur à Merveille*; General Havelock; *Alba Maxima*; *Charles Dickens*; *Victoria Alexandrina*, a new and very fine crimson; and *La Prophète*, also new, pink-striped.

The only other competitors were Messrs. Carstairs & Sons, of Edinburgh, who had in their collection good spikes of *Amphion*, crimson; *Agnes*, bright rose; Lord Palmerston, a pretty blue; *Seraphine*; *Charles Dickens*; and *Ida*.

Class 9 was for twelve kinds, for amateurs only, and here the exhibitors were Mr. Carr, gardener to B. Noakes, Esq.; Mr. Young, of Highgate; and Mr. Taylor, gardener to C. A. Hanbury, Esq., of East Barnet, who stood on the prize list in the order in which they are named, but whose exhibitions fell far short of the excellence of the eminent nurserymen already mentioned.

Mr. Carr had fine blooms of Mrs. Beecher Stowe, *Von Schiller*, *Madame Van der Hoop*; and good examples of *Duke of Wellington*, *Charles Dickens*, and some others; whilst Mr. Young's collection contained a fine spike of *Howard*; *Koh-i-Noor*; *Prince Albert*, a good dark purple; *Princess Alice*, with large light blue bells; *Mont Blanc*, and other well-known sorts.

The next Class, 10, for six new kinds, only contained two exhibitions—those of Mr. Wm. Paul and Messrs. Cutbush, who were respectively first and second. Mr. Wm. Paul had *Macaulay*, which, as a rose-striped kind, was a gem; *Duc de Malakoff*, fawn; *Koh-i-Noor*, a splendid spike; *Haydn*, a beautiful mauve; *Snowball*; and *Florence Nightingale*. Messrs. Cutbush had *Feruk Khan*, a very good dark plum; *San Francisco*, a nice canary yellow; *Prince of Orange*, a fine deep rosy pink; *Maria Theresa*, with a close spike of a fine rose; *Rouge Eclatante*, a distinct double deep crimson; and *Fair Maid of Denmark*, with large pure white bells.

In Class 11, six pots, Amateurs, the first prize was withheld. Mr. Carr received the second, and among the flowers he showed were three nice spikes of Mrs. Beecher Stowe; *Lina*, small but of a fine crimson; and *Heroine*, yellow. In Mr. Young's, who was third, the best were *Grandeur à Merveille* and *Elfrida*, white.

Of early Tulips, there was again a good display, Messrs. Cutbush taking first in the class for twenty-four kinds; and Mr. W. Paul second. The former had *Grand Duc*, brownish-red with yellow edge; *Vermilion Brilliant*; *Cramoie*; *Duc d'Arenberg*, brown with yellow border; *Fabiola*, rosy violet and white; and *Rouge Luisante*, rose. Mr. Paul contributed *Grand Duc*; *Proserpine*, a rich rose; *New Yellow Tournesol*; *White Pottebakker*; *Tournesol*; and *Canary Bird*, yellow, but the flowers did not stand out so well from the foliage as in Mr. Cutbush's.

The next Class was also for six kinds, but for eighteen pots; and here again Messrs. Cutbush and Mr. W. Paul occupied the same relative positions, the former having *Duc d'Arenberg*; *Fabiola*; *Vermilion Brilliant*; *Florida*, purplish-violet; *Mathilda*, a showy red and white; and *Rouge Luisante*. Mr. Paul, whose exhibition was also excellent, had *Archduc d'Autriche*, a fine crimson and yellow; *Cottage Maid*, a pretty rose; *Standard Royal*, very showy; *Van der Neer*, a very fine purplish-violet; and *Striped Pottebakker*.

In the Amateur's Class, good pots of *Rex Rubrum*, *Tournesol*, *Perle Blanche*, and *Duc d'Arenberg* were shown by Mr. Carr, who was first. Mr. Young was second.

The Miscellaneous Class is always a large one, and on this occasion it occupied an unusually large space. Here Mr. W. Paul received a first prize for a magnificent collection of a hundred Hyacinths, among which we noticed as being particularly fine—*Macaulay*; *Marie*; *Howard*, brick red; *Snowball*; *Solfaterre*, a splendid spike; *Agnes*, bright pink; *Princess Clothilde*, a new and dark red; *Princess Charlotte*, a beautiful peach; *Ornement de la Nature*; *Aurora Rutilans*, a very fine colour—crimson; *Milton*; *Mirandoline*, pure white; *Duc de Malakoff*; and *La Nuit*, a very dark colour. *Couronne de Celle*, *Baron von Tuyl*, *Grand Lilas*, and other well-known sorts made up the remainder.

Messrs. Cutbush had also a splendid collection of one hundred pots, comprising most of the sorts above enumerated, and many other fine varieties. In Reds, *Susannah Maria* was a fine double rose; *Duke of Wellington*, a splendid spike; and of single kinds of the same colour, *Macaulay*, *Queen of Hyacinths*, and *Johanna Christina*, pale rose, were very fine. In Whites, *Sir Bulwer Lytton* was a fine double cream with a large spike; *Queen of the Netherlands*; and *Paix de l'Europe* had large spikes and pure white bells; and *Miss Burdett Coutts* is also a remarkably fine blush variety with very large bells, and the same may be said of *Tubalora*. In Blues, *Bride of Lammermoor* and *Pieneman* had very large bells; *Charles Dickens* and *Grand Lilas* were also fine; *Aurora* was a pretty straw colour tinged with pink; and *Duc de Malakoff* has been already mentioned as being an excellent new straw-coloured variety. This collection well deserved the second prize which was given to it; and Mr. Cutbush also received a similar award for twelve *Amaryllises*, of which *Admiral de Ruyter* was a rich ruby red; and *Eclatante*, a blood red with white streak. The other varieties exhibited were variously streaked with red or crimson and white.

Second prizes were awarded to Mr. Bull, of Chelsea, for a collection of new and rare plants, which were mostly the same as those exhibited at the previous Show; to Mr. W. Paul for four boxes of beautiful cut Roses, including *John Hopper*, *Madame Masson*, *Colonel de Rougemont*, and fine blooms of other leading kinds; and to Messrs. J. & C. Lee, of Hammersmith, for a collection of greenhouse plants, in which were a fine bushy plant of *Acacia Drummondii*, and two handsome specimen *Epacris*, *Eclipse* and *Miniata splendens*; several *Amaryllises*; *Eriostemon myoporoides*, a very ornamental

species; *Hedera tulipifera* and fuchsioidea, *Oncidium altissimum* with two fine spikes of flowers, and other plants.

Messrs. Veitch had also a fine collection, which included handsome plants of *Chorozema ilicifolia*, *Eriostemon densifolium* and *nerifolium*, and a beautiful specimen of the white-flowered *Rhododendron jasminiflorum*, *Azalea Exoniensis*, which was a splendid pyramid of crimson bloom, numerous varieties of *Lycaste Skinneri*, and other plants.

Of other objects, three boxes of cut Roses were shown by Paul & Son, of Chesham; cut Camellias by Messrs. Lee, of Hammersmith; and Mr. W. Paul, of Waltham Cross; *Bougainvillea* by Mr. Daniels, gardener to the Rev. C. R. Keene, Henley; collections of stove and greenhouse plants by Messrs. T. & A. Smith, of Dulwich, who also again exhibited their variegated *Hammerocallis elegans*, for which they had an extra prize. They had, besides several *Azaleas*, one of which, a double white, called *Flag of Truce*, received a special certificate from the Floral Committee. From the same firm there were also several seedling *Cinerarias*, the merits of which as well as of several other objects which were brought forward, we will leave to the pen of our talented contributor "D." of Deal, to describe.

Of tree *Mignonettes*, for which special prizes were offered, there were none to compare with the immense plants shown by Mr. Richards, gardener to Lord Londesborough, Tadcaster. These stood 5 feet in height and had fine, dense, pyramidal heads, which were covered with flowers. *Pandanus elegantissimus*, from Messrs. Veitch, and from Mr. Bull, of Chelsea, had a first-class certificate. *Trichomanes spicatum*, of a pellucid olive green, a dwarf and handsome species, came from Mr. Bull; as well as *Nephelaphyllum cordatum*, a terrestrial Orchid, forming a nice companion to the *Anætochilus*, the leaves of a very light green dotted and veined with olive green; and *Funkia univittata* with a broad white stripe up the centre of the leaf. From the same exhibitor also came *Yucca Stokesii*, *Begonia Sécrétaire* Morren, with very handsome silvery leaves, and two seedling *Geraniums*, *Beauty* and *Auriculá*, the former orange scarlet with white eye, the latter salmon with a white eye.

Rhododendron Romaine de Smet, pink and much spotted, was shown both by Messrs. Veitch and Messrs. Lee, and in both instances was commended. *Skimmia japonica vera*, from Mr. Standish, was awarded a first-class certificate; and last, but not least in importance, was the male *Aucuba japonica* in flower, the stamens and pollen being plainly visible in its small dusky flowers. Moreover, this was the first plant of the kind ever seen in flower in Europe, and its importance was, therefore, not overrated when it received a special certificate—a medal it should rather have been, as there can now be no doubt that we shall soon see the scarlet fruit of the female plants in abundance. The green-leaved *Aucuba*, or the original from which the variegated race has sprung, was also shown.

WHEN the dense yellow fog settled down on the west end of London on the morning of Wednesday last, after the promise of a bright and clear day, not a few said, "Ah! the old luck! If it does not rain, there must be fog when we have a show." Some there were more hopeful, who looked for a brighter afternoon, when the fires in London grates burnt bright, and the dense volumes of smoke had time to rise—and these latter were right. A beautiful day for the season of the year enticed out the gay and brilliant butterflies, and the gardens were well filled by a large number of Fellows and lovers of flowers. Several members of the Danish Royal family were present, and seemed much interested; while the Duchess of Cambridge and the Princess Mary, who are as regular attendants at the gardens as they are interested in the productions exhibited at the shows, were there also. The Royal party was conducted round the Exhibition and through the gardens by Sir Charles Dilke, the Rev. J. Dix, and Mr. G. Eyles.

Never was it more apparent, as observed by one of the correspondents of THE JOURNAL OF HORTICULTURE last week, how much the strength of these Exhibitions rests with the nurserymen. Had the productions of Messrs. Paul, Cutbush, Veitch, Lee, Smith, and Bull been taken away, verily there could have been little left; but the zeal and energy of these various firms contributed to make altogether a gay and brilliant assemblage. We could not but regret that the place again selected was the refreshment gallery. We saw some plants exhibited for the approval of the Floral Committee, which we should think would never recover the draught they experienced from the open door near which they were placed.

Although called the Camellia Show, it was the Hyacinths that formed the main feature of the Exhibition, and nothing could exceed the beauty of the long line of them exhibited.

Mr. Wm. Paul occupied the place hitherto held by Messrs. Cutbush & Son, who came second in the three classes, Mr. Paul standing first.

In the collection of six new and distinct varieties Mr. Paul had some very magnificent blooms, *Koh-i-Noor* being quite a model. There were in it besides, *Duc de Malakoff*, *Haydn*, *Florence Nightingale*, *Snowball*, and *Macaulay*. A still newer lot was shown by Mr. Cutbush, consisting of *Rouge Relatante*, red, semi-double; *Fair Maid* of Denmark, large white; *San Francisco*, a very fine semi-double, deeper in colour than *Ida*; *Prince of Orange*, pink, striped with carmine; *Feruk Khan*, dark blue; and *Maria Theresa*, pink, dark stripe. These were all novelties of 1863, but were not, perhaps, quite so large and fine in the bloom as Mr. Paul's.

In the class for eighteens, both Mr. Paul and Messrs. Cutbush had some very fine trusses. Amongst the former were *Haydn*, very large; *Koh-i-Noor*, a splendid spike; *Macaulay*, very fine; *Solfaterre*, large and good, novel, too, in colour—a sort of orange red. Mr. Cutbush had amongst his eighteen fine spikes of *Victoria Alexandrina*, white; *La Prophète*, pink-striped; *Ida*, fine yellow; *Florence Nightingale*, pink, with red stripe; and *Garrick*, fine blue, with a darker stripe of same colour. Amongst the 100 varieties contributed by each firm were some really magnificent blooms. Mr. Cutbush had *Van Humboldt*, dark red; *Johanna Christina*, light pink, carmine stripe; *Sir Bulwer Lytton*, white, large, and semi-double; *Duc de Malakoff*, orange, with red stripe; *La Nuit*, very dark; *Mammoth*, fine white; *Aurora*, orange yellow; *Madame Van der Hoop*, white; *Pieneman*, a large blue bell, but the bells are too far apart; *Reine des Jacinthes*, very fine; *Queen of the Netherlands*, good white; *Princess Clothilde*, dark pink; and *General Havelock*, very fine, dark. Amongst Mr. Paul's were *Aurora rutilans*, dark red; *Grand Lilas*, fine blue; *Aleda Jacoba*, yellow; *Cosmos*, late, and the spike somewhat too open; *Couronne de Celle*, blue, something like *Grand Lilas*; and *Mrs. Beecher Stowe*, pink, striped.

Messrs. Carstairs sent a nice lot of eighteen from Edinburgh, grown in small pots, for which a third prize was awarded.

In Tulips, Messrs. Cutbush was first with a very nice lot, of which the best were *Rouge Luisante*, *Vermilion Brilliant*, and *Thomas Moore*. The most favoured spot in the Exhibition was, however, that where the two boxes of Roses exhibited by the Messrs. Paul were placed, and an opportunity was afforded of seeing some of the new Roses of last season, especially in the box of Mr. William Paul. *Eugène Lebrun* was good, but eclipsed by *Olivier Delhomme* and *Charles Lefebvre*, two very bright and well-shaped flowers. *La Brillante* fully sustained its character for brightness, and *Robert Fortune* seems to be a "topper," very globular and lively in colour; but as far as fulness and size were concerned, they were all eclipsed by *John Hopper*, our new English Rose. We can testify to those who have not seen it (and the purchasers of it must comprise an extensive number, inasmuch as Mr. Ward had, up to the 1st of January, sold 2500 plants!) that it bids fair to realise all that I and others have said on its behalf. Mr. G. Paul had amongst his a fine bloom of a good dark *Prince Camille de Rohan*, *Clement Marot*, and a by-no-means-ugly bloom of *Reine des Violettes*, caught just at the right moment.

The tree *Mignonettes* deserved a prize for ugliness. Perhaps, like a *Skye Terrier*, it is in that their beauty consists; but never did we see a finer example of labour uselessly spent than in these. We would far rather have a sixpenny or ninepenny pot of this fragrant weed, such as one can purchase in Covent Garden, than the biggest and ugliest of the great plants.

There was a fine collection of *Amaryllis* from Messrs. Cutbush, of Highgate. The bulbs were as fine as could be well imagined, but the flowers were deficient in breadth of petal, giving them an open and loose appearance. *Eclatante* and *Howard* were amongst the best.

The Camellias disappointed me. The season had, I know, been a bad one—wood had not ripened last summer; but, notwithstanding, I had hoped that the prize of £10 would have brought together something better. The best flowers there were two of Mr. Standish's, not entered for competition—*Sarah Frost* and *Duchesse de Berri*. The largest were Mr. Veitch's, which obtained the prize. Amongst seedling flowers, there were some promising yearling *Cinerarias* from Messrs. Dobson, of Isleworth, and

Messrs. Smith, of Dulwich. Prince of Wales, a beautifully-shaped flower; Model of Perfection, very good, but not quite so large; and Princess of Wales were good; while Sunbeam, exhibited by Messrs. Smith, is very bright and promising. There was a pretty new Rhododendron, Romain de Smet, exhibited by the Messrs. Lee, of Hammersmith, and Mr. Veitch, of Chelsea; and Hebeclinium atro-rubens by Mr. A. Henderson, of Pine Apple Place, and Mr. Parker, of Tooting, is likely to be a useful spring-flowering plant. Mr. Henderson had also a pretty Epacris, Viscountess Hill; and Mr. Smith, of Dulwich, a nice little collection of Cyclamens, consisting of persicum and its red and spotted varieties.

I have left untouched the plants exhibited, nor have I given a nominal list of the florists' flowers, as these matters will fall to other hands; but I think one could not but see how superfluous the February Exhibition was, while, at the same time, such a Show as this tends very much to quicken the taste for early spring flowers.

The conservatory looked gay; but really there is such a thing as viewing everything in a *couleur de rose* tint, and spectacles of the most roseate hue must have been on your correspondent of last week who could see anything in the gardens. To me they seemed but little improved; while those abominations, the oil-cloth patterns of Mr. Nesfield, I heard unsparingly condemned on all hands.—D., Deal.

APRICOTS AND ORCHARD-HOUSES.

I CONFESS being much surprised at Mr. Rivers finding fault with my devoting a page and a half of No. 106 of THE JOURNAL OF HORTICULTURE to the management of the Apricot, when his own articles on his favourite orchard-houses might be measured by the dimensions of the houses themselves. To say the produce of his pen in that way is one hundredfold more voluminous than my unfortunate one on Apricots is speaking within the mark, so that the public may draw their own conclusions as to whom the term "voluminous" more particularly applies.

Mr. Rivers also says that all writers on gardening matters ought to be travelled men. Unfortunately those in private service cannot always make their travelling from place to place such a paying affair as a nurseryman can do; but, at the same time, the views they put forth are exempt from all interested motives. But as the direct reference Mr. Rivers makes to me compels my saying more of myself than I would have wished to do, I may say I believe there are only about half a dozen counties that I have never visited; while on the other hand, I have followed my calling in five counties of England, and these widely apart. I do not for one moment doubt but Mr. Rivers travels, and sees much more than I do, and I have read many of his articles with pleasure; at the same time I must say I should have liked them much better had his favourite theme usurped somewhat less space in the productions of his pen. Assuredly Mr. Rivers must have been joking when he called my article on the Apricot of one page and a half voluminous. Even his article in criticism of mine was half its length, without adducing anything fresh in the management, beyond condemning the idea of Apricots being grown against a north wall, which I happen to know was done by one of the most successful fruit-growers in the kingdom—one who, I believe, has taken as many prizes at the metropolitan shows as any man living.

Mr. Rivers says I have, "as usual," had a throw at orchard-houses. Now, on looking over the paragraph relating thereto on Apricot trees, the impartial public will, I believe, give me credit for dealing with that part of it with great delicacy. And more recent information confirms me that I spoke the feelings of nine-tenths of the fruit-growers in the kingdom. At the time I wrote it a letter from a friend was before me, detailing the unsuccessful attempt to grow Apricots under glass; and if Mr. Rivers had read the letter of "A CONSTANT READER," in No. 102 of THE JOURNAL OF HORTICULTURE, he would then have learned that there had been failures in Apricot-growing since 1829, as the writer says he had a fair crop on his open wall in 1861 and 1862 without any covering, while he had none in his orchard-house in 1861, and only three or four fruit in 1862. Surely this case required more of Mr. Rivers' attention than mine, especially as with the simple notice of Apricots not doing well under glass, I believe I have not more than incidentally mentioned orchard-houses for nearly two years; but even if I had, is not criticism legitimate?

Let us, however, take a fair view of the matter, and see what really has been done in the way of orchard-houses which has been so many years before the public. I will take the two broadest views that fruit is judged by—quality and quantity, and just compare what has been done in orchard-houses during the last twelve or twenty years with what has been done in the old-fashioned way.

Like many of your readers, I went to the great fruit show at Kensington in the beginning of October last, and was much pleased with what I saw. Amongst other things I was told there were upwards of two hundred entries of Pears, some of them of half a dozen and more dishes each, and there were twenty-one prizes awarded. Now, was it not fair to suppose that the mode said to produce the best fruit ought to have been represented in the prize list? but from inquiries I made at the time and since, I believe not one of these twenty-one prizes was given to orchard-house fruits. Now, I call this a fair test of the merits of the mode. There were some nice fruit on trees in pots exhibited, very creditable to the grower; but I think there were samples of the same kind of fruit grown in the ordinary way, quite as good, and certainly larger.

Now, as Pears are a favourite orchard-house fruit, why were none in the prize list? The answer is simple and conclusive enough. When orchard-house fruit-growers can beat those who have followed the old path it will be a very good time to vaunt their success. Hitherto (with, perhaps, one solitary case in a thousand), they have been "nowhere" in the race. It is needless saying anything about the quantity of fruit from orchard-houses: the letter of "A CONSTANT READER," page 186, could be repeated in many instances, only there is always a greater disinclination to record failures than successes.

Having a year or two ago given my opinion on orchard-houses, I may say I have seen nothing since but what confirms the views I then took of the matter. With trees planted out on a border of suitable soil, I have not the least doubt but most fruit trees may do well, and cause little trouble. Kept in pots they may occasionally do tolerably well, but with a vast amount of extra care and attention; and even with that, failures will occur. To say that a Peach will not succeed in a pot is more than I ever asserted; but I have never yet seen a fruit of that kind grown in a pot equal to the same grown in the ordinary way, and the results of fruit shows confirm my views; besides which, the term "fruit grown on trees in pots," must be accepted with caution. I have been anxious to see good Peaches in pots, and once took a journey of many miles to witness this result, and sure enough there was a fair good crop of fruit on trees in pots; but the said pots were as firmly fixed to the ground as the house itself. The roots, alive to one of Nature's laws more potent than any Mr. Rivers teaches, had gone in quest of that food intentionally denied them by the cultivator. To call such fruit "grown in pots" is a mockery.

I do not by any means doubt but that Mr. Rivers' trees are managed differently, but I have not seen them; nevertheless, I find there is a difference of opinion amongst those who have. But as Mr. Rivers says his greatest difficulty with Apricots has been in thinning the fruit, I am bound to believe him a very lucky man. By the columns of THE JOURNAL OF HORTICULTURE, there are others as well as myself who have yet much to learn on this matter; and although I have not read all the voluminous matter Mr. Rivers has written on orchard-house affairs, I have never read of orchard-house fruit beating at a fruit show that of the same kind grown in another way. At the same time, more light would be thrown on the matter, if all who have tried growing the larger kinds of fruit trees in pots would come forth and state the result of their practice, success, and failure. That there are several who have abandoned it owing to failure I have good proof; but as such people naturally shrink from avowing a failure in an enterprise they had previously advocated, it is not fair to urge them to come forward. This, however, need not prevent those who have been successful from recording their practice. For, be it remembered, that I do not deny the possibility of a good Peach being grown in an orchard-house; but I ask, Where was one grown in a pot equal to those grown elsewhere? and was any other opinion of its merits taken except that of the grower?

That it is quite possible to grow good Wheat, Barley, and Potatoes in pots I do not doubt, and "agricultural-houses" may be as fashionable hereafter as "orchard-houses" are now, the names bearing a strong resemblance; but I reckon the time is far distant when Mark Lane or Covent Garden will be in any

way influenced by the supplies from these sources. A dozen or more years have made no impression in the fruit trade; and when, as Mr. Rivers says, sturdy Oaks grow in flower-pots, will be a fitting time to look out for the other.—J. ROBSON.

GRAPES SHRIVELLING-UP WHEN IN BLOOM.

CAN you inform me the cause of my Grapes going off? My Dwarf Kidney Beans, you will find from the specimens, are affected in the same way—namely, all the blossom drops off.—K. B.

[We cannot speak quite decisively as to the cause of the misfortune, but in general such failures are the result of a check given to the system of the plant. Though you do not say so, yet we should judge from the length and consistence of the main stem of the incipient bunches, that the Vines are not deficient in vigour; but the flowers, instead of expanding, seem to have shrivelled-up and withered.

We recollect of a crop of Vines being lost from this cause, owing to a break-down of the heating apparatus at night during a severe frost in early forcing. There might have been some means resorted to to keep the frost out, if the accident had happened in the evening; but as it was, the bunches were frosted and never recovered, though the foliage suffered but little. There has hardly been frost enough this season thus to affect your Grapes, and therefore this could not be the cause. We believe that Vines set better when the temperature is pretty high even at night; but provided a good heat from sunlight is obtained during the day, a considerable decline at night will do but little harm. Contrary to all our general rules on the subject, we have several times had Vines in bloom as low as from 40° to 38°, and we did not consider they were at all injured. Of course, the heat was gradually raised during the day. Such a low temperature as that would not do for a continuance even at night; but, on the other hand, such a high temperature in darkness as 75°, and upwards, we consider to be more artificial than natural.

Once or twice we have seen bunches on a Vine affected as yours are from the explosion of a flue at night, or from the water in an open cistern being made to boil, either from a deficient supply of water, or from the flow being arrested whilst a strong fire was beneath the boiler, and the consequence was strong jets of steam or of water in a very hot state were thrown into the house, and scalding was the result; but as you do not say anything of the foliage being injured, we do not suppose that this happened in your case, though such occurrences are not uncommon in places where even the greatest and latest improvements in heating have been carried out. It matters not if one boiler heats a range of houses, and nothing more is wanted, besides tumbling-in a few barrowloads of fuel, than to regulate the taps and valves; for if this is not done, there may be burstings and explosions, even with the best-planned hot-water apparatus.

Sometimes when the wood is extra luxuriant and long-jointed, and has not been sufficiently ripened the previous autumn, somewhat similar examples will present themselves, but not exactly so; for in that case, when bunches do show, those that fail to come to perfection are apt to turn up and go off in tendril fashion at an earlier period than yours dropped their blossoms.

Again, over-excitement is apt to produce this effect, especially when there is a want of counteracting sunlight. Suppose we have a week or a fortnight of dull, cold weather, and the heat is kept up to 75° and 80° during the day, and from 70° to 75° at night, little air given, and plenty of moisture kept up in the house, the extra excitement produces a weakness in the constitution of the plant, and the most sensitive and valuable part is the first to suffer. We have seen such Vines, young bunches especially, after such dullness, closeness, and heat, hang weltering when the first sunny day came, when those with 10° or 15° lower temperature, and air also given, met the change from cloud to sunshine without any effect except apparent pleasure.

Whether any of these lesser causes have had any influence in your case you alone can determine, and we allude to them as much for the sake of some other inquirers as for your own individual case. Our opinion is that the falling of the flowers in your bunches is owing to a want of reciprocal action between the roots and the branches of the Vine. This may arise from the roots being placed deep in stagnant moisture, and, therefore, cold; or the roots may be near enough the surface, and yet wet

and cold, and, therefore, unable to meet the wants of the bunches in a high temperature within the house. But here you may say, If such were a cause, why did it not manifest itself sooner? why did the buds expand? why did the bunches show and look well, and then the flowers drop-off in this manner, instead of setting and swelling their fruit? Truly we can give no other reply than that the needed supply seems to fail at the most critical time, and that fruit under such circumstances will always suffer before leaves, though these and shoots too often feel the effects of such influence. If there is much of the stems of the Vines in the house, these would contain enough of elaborated sap to supply the bunches for some time; but if nothing fresh is obtained from the roots, there must come a period of exhaustion. The avoidance of such want of correlative action between the roots and branches must constitute the chief remedy. If the roots are very wet after this damp winter there would be no time to drain; but several rather deep pits or wells might be made in front of the border. If the border, inside or outside, were dry, then moisture and heat could easily be communicated by warm waterings. If the border were well drained, it could be forked on the surface, a little warm water added, and a covering of warm fermenting material placed over it; but if the roots are deep that will do no good. In such a case all that you can do is to prevent the border getting colder, and making it drier by litter-covering, unless when the sun shined, and reducing the temperature inside the house considerably, especially at night, that the plants may be less excited. You might also tie small weights to the points of the bunches—say bits of stone or lead, from a quarter to half an ounce in weight, and the strain thus given to the stem of the bunch will, we believe, entice more of the elaborated sap than would otherwise come to the bunch, and thus the fruit may be preserved. We see nothing more strange in this than the strength of the muscles in the arm of a blacksmith resulting from wielding the hammer. It would be needless applying such a remedy unless under such circumstances. Two years ago an enthusiast induced us to look at a viney where most of the bunches were threatening to become tendrils. By tying the weights on, and reducing the temperature until the roots were at work, a very fair crop was obtained. The border was well drained early in autumn, and covered with litter, and next season no such contrivances were necessary.

It would just be as well to examine and see if mice gnawing the stems were no cause of the disappointment, as they seem to have taken to Vines as a luxury this last winter.

You did not send any flowers of the Dwarf Kidney Beans, but the leaves did not convey any idea that they were suffering from a similar cause. The foliage was rusted, and had all the appearance of the plants having had too much water whilst the earth was cold. There were also marks of the small thrips—that is, where they had been, though we discovered none alive. The only remedy, if in fruit, is to gather this as soon as possible, and destroy the plants. If nearly in fruit, remove the worst leaves, fumigate with tobacco, and well syringe with clear soot water.—R. FISH.]

APRICOT TREES ON THE COTSWOLD HILLS.

I HAVE read the letters of both Mr. Robson and Mr. Rivers, and am thankful for what information they give.

I am inclined to think the rarefied air has much to do with the welfare of the Apricot, because this part of Oxfordshire, where the cottagers pay their rents with the proceeds of their Apricots, being on the end of the Cotswold Hills, has a very thin and bracing atmosphere. As Mr. Rivers says, the soil is oolite. But the oolite extends in a long narrow band from the south coast of England to Whitby in Yorkshire. One would like to know whether the Apricot would succeed equally well all along this band.

The oolite is rather elevated everywhere, so that it is hard to tell whether it be the elevation or the limy nature of the oolite. But if the tree grows in stiff loam very well the air may still have a great influence. Our unprotected trees have not suffered with all these frosts.—T. C. B., *Oxfordshire*.

GARDENERS' SOCIETY.

I HAVE before me your very valuable Journal of the 10th instant, containing the article by "G. A." I for one—and I only express the feelings of hundreds of the gardening community—was glad to see the subject of co-operation in gardening

brought before your readers. We must certainly interchange opinions and receive information from one another through the medium of your valuable Journal, yet still we are disunited as if we had no common interests to aid. We are unlike any other body of men in this, and, as "G. A." observes, we are each striving for his own aggrandisement irrespective of the results to our brothers of the spade. Surely, we could rise better were we to consult each other's welfare and work together in unity, which makes strength.

Shall we not, then, make as a body some response to "G. A.'s" propositions? I hope we shall, and I hope we are on the verge of some measures to the end we have to attain.

Could we not, as other professions and trades have done, join hand-in-hand to try to eradicate the existing evils which "G. A." mentions? Shall we not rally round the standard of the proposed Society, and, each putting his shoulder to the wheel, give a hearty strong push in the right direction and push the quacks, as the poet Hood says, "anywhere, anywhere, out of the world," at least out of the gardening world?

Surely, no one will doubt that we have men in our profession who are competent to effect such a union of purpose, and I do not doubt their willingness to take the management of such a Society could they be sure of the co-operation of the gardeners. Surely we are not so blinded to our own interests as to withhold our help from those who would be trying to help us; and that a Society of the character is very necessary must be obvious to all who, with an unprejudiced eye, will look at the proposal.

Who has not seen those whom "G. A." terms "utilitarians," when they have been with Dr. or Mr. So-and-So for a year or two as groom, gardener, cowman, and errand-boy creeping in as head-gardener? It is this false way of gardener-making that is ruining our profession. Not that I would try to keep these men from getting on and bettering their station in life—so far from it, that I would help them to attain it in a trustworthy way. Let them study and pass some such examination as "G. A." suggests before they are permitted to practise, and there is not one in ten who would then have to be allowed to practise.

Who has not seen many instances of the character just mentioned? I could give instances were they necessary, but every one with open eyes must have seen numbers of them; and yet they are placed on the same level as the person who has served an apprenticeship of seven or more years, and studied hard too.

Is it not surprising that gentlemen will employ such persons to take charge of valuable plants? yet they do it often. Surely, it is plain that a Society would be of great service both to masters and gardeners. The masters would then be sure of having a competent man and of good character; and if the proposal were explained to them, would surely come to our side and give us a helping hand to promote the interests of both, and we should take our stand in the world as a united instead of a divided body.

There are undoubtedly those who wish and looking-forward amongst the gardeners of England for some such Society to unite them and to protect them. I am glad to know that this is the case; and it is my opinion that, were a Society of the kind formed, they would with one accord support it, as they would be in duty bound to do. It cannot be expected that all will agree with "G. A.'s" proposition as to the government of the Society named, but his are merely hints he has been at the trouble to prepare and throw out. I certainly think the expenditure might be to a considerable extent reduced and thereby greatly bettered, for one of the points in the successful management of the Society would be to do it as economically as would be consistent with other points. But a committee of energetic men—and we have a great many in our profession—would soon surmount these matters, and every obstacle that would seem to prevent the formation of the Society proposed would vanish.—
A YOUNG GARDENER IN YORKSHIRE.

In your Number of the 10th there is a communication from a correspondent signing himself "G. A.," relative to the formation of a company, to be styled "The Company of Gardeners of Great Britain and Ireland."

All honour to him for being the first to introduce the subject; and although he may be rather sanguine, still I think the general outline of his plan is good; and as far as my humble means would allow (and I speak the sentiments of several gardeners of my acquaintance), I would give it my hearty support, for it is a want long felt by gardeners in this country.

There is, one thing I would like it better for, if it were more of a gardeners' than an employers' and amateurs' company.—
E. R., Cappoquin, Co. Waterford.

[There can be no question of the importance of the subject you allude to. The difficulty would be to find gardeners of sufficient standing, and with time at their disposal to work the Society up, so as to give it a fair start. We have every reason to believe that Mr. Fish and others you name, will have something to say on the subject. We know that though Mr. Fish looks on the whole scheme as somewhat over-sanguine and impracticable, that yet, like you, he is convinced that gardeners ought to do something of the kind to lessen those scenes of suffering and of destitution which are now so common when gardeners are laid aside by affliction, or are taken away when young, leaving families unprovided for, and for whom the Gardeners' Benevolent Society can do nothing. Before such a society in its more prominent features is organised, no respectable young gardener ought to take upon himself the responsibility of being the head of a family, without, by insurance or other means, making some provision for the day of affliction, and the probability of leaving young children behind him. The too-common carelessness shown in this respect is not creditable to gardeners in general.]

ROYAL HORTICULTURAL SOCIETY.

MARCH 18TH.

FLORAL COMMITTEE.—The Floral Committee held its meeting this day in conjunction with the second spring or the Camellia Exhibition of the Royal Horticultural Society at South Kensington. The plants placed before the Committee were neither numerous nor particularly novel and interesting. The most attractive plants were the two specimens of *Aucubas* sent by Mr. Standish, of Ascot; the one a female in flower of the green-leaved variety, till lately unknown in England, and introduced by Mr. Fortune from Japan; the other a small male plant in flower of the well-known variegated *Aucuba*, so common in all suburban gardens. The plant so well known to us is a female, and it is remarkable that the pollen-bearing plant has never before been brought into our country. We may now hope to see our old variegated friend under a new aspect, as Mr. Fortune informs us that under favourable circumstances it produces abundant scarlet berries, three times as large, and as brilliant as our common holly berries. These plants had been before the Committee on a previous occasion, and received their award. At this meeting a special certificate was voted for their being exhibited under such interesting circumstances. Mr. Standish also sent a plant of a new *Skimmia* in flower, which is supposed by some botanists to be the true *S. japonica*. Should that new variety produce an abundance of berries similar to the plant now known as *S. japonica* it will be a great acquisition. A first-class certificate was awarded.

Mr. Bull, of Chelsea, sent a new plant, *Pandanus elegantissimus*, a handsome-foliaged plant, with long, narrow, deep green, highly-polished leaves, edged with a brown margin, to which a first-class certificate was awarded. Mr. Bull also sent a new and interesting Fern, *Trichomanes spicatum*, which also received a first-class certificate. From the same firm were sent plants of *Alocasia picta*, *Nephelaphyllum cordatum*, *Fuchsia variegata*, a *Begonia*, and *Yucca Stokesii*; also three promising varieties of *Scarlet Pelargoniums*, but of which at this early period of the season no decisive opinion could be formed.

Mr. Turner sent two *Cinerarias*, one named John Spencer, which received a label of commendation, a very handsome, bright, showy, crimson variety, commended as a useful decorative plant. The other, named Mrs. Harley, was not considered an improvement on other varieties in cultivation.

Specimens of *Rhododendron Romain de Smet* were sent from Messrs. Lee, Hammersmith, and from Mr. Bull, Chelsea. A label of commendation was awarded to this plant as an early-flowering variety, with pale rosy lilac, profusely spotted flowers, but much resembling other well-known kinds.

Messrs. Lee also sent two *Camellias*—*Napoléon III.*, a delicate rose flower, shading to white, with well-cupped petals; to which was awarded a label of commendation. The other, *Jubilee rosea*, said to be a sport from *Napoléon III.*, with deeper-shaded flowers of the same colour, but inferior in form. From the same firm was sent also *Hebeclinium atro-rubens* and *cordatum*, large and coarse-foliaged plants producing heads of grey or

lavender-coloured flowers, somewhat resembling the *Ageratum*. These plants are of too robust a habit for general purposes, and would require a large conservatory to produce a good effect.

The Messrs. Smith, of Dulwich, sent a collection of *Cyclamens* of various shades of colour, also some well-grown plants of double pink and white *Primulas*. These were very beautiful, and decidedly an improvement, both in form and colour, on the semi-double flowers from which they were raised. A special certificate was awarded this interesting collection. A basket of small plants of *Azalea Flag of Truce*, a double white variety, was also sent by Messrs. Smith, and received a special certificate. This *Azalea* maintains its good character, and is not surpassed by any other double white variety, either for its purity or profusion of flowers.

A small plant of *Azalea Souvenir de Prince Albert* was sent by Mons. Verschaffelt, from Ghent. It will be remembered how highly this *Azalea* was spoken of at the *Azalea Exhibition, 1862*; it was then considered a first-class variety. The plant sent on this occasion, either from not being in condition, or from some other cause, disappointed those who had formed so favourable an opinion of it, neither colour nor form of flower at all resembled in quality those of the specimens exhibited last year.

Mr. Parker, of Tooting, sent a *Tropæolum* named *Vivid*. The plant was covered with flowers inferior both in form and colour to *Tropæolum Brilliant*. It may possess some merits from its tendency to early-flowering.

RATING OF NURSERYMEN'S GREENHOUSES, &c.

"I HAVE erected several hothouses and greenhouses employed solely for the purposes of supporting myself and family. Now the parish have just doubled my rates on the ground of the glass houses I have erected. Would it be asking too much for a reply as to whether this is lawful?—that is, whether the parish authorities can rate a nurseryman's glass houses to the poor's-rates, and, as he increases his buildings, rate additionally such buildings or not?—AN OLD SUBSCRIBER, G. R.

[We are of opinion that a nurseryman's greenhouses and his similar structures used exclusively in his trade are not rateable. We reprint the following from a former volume of our Journal:—

"A nurseryman rents a piece of ground, erects upon it greenhouses, and stocks it thoroughly. The parish then endeavours to rate him to the poor's-rate according to its improved value; and the question has arisen whether this higher rating is admissible. The question was brought before the Winchester bench of magistrates, and was decided by a majority that the higher rating is not maintainable. They held that greenhouses, unlike other buildings erected by tenants in other trades, do not attach to the land, but are always treated in law as stock in trade, which is clearly not rateable. What Lord Kenyon stated in *Penton v. Robart* (2 East 90), is so strongly in support of this view of the case, and is so illumined by that enlightened policy which should influence a decision upon this question, that we offer no excuse for its quotation:—

"The old cases upon this subject," said his lordship, "leaned to consider as realty (part of the freehold) whatever was annexed to the freehold by the occupier; but in modern times the leaning has always been the other way, in favour of the tenant, in support of the interests of trade, which is become the pillar of the state. What tenant will lay out his money in costly improvements of the land, if he must leave everything behind him which can be said to be annexed to it? Shall it be said that the great gardeners and nurserymen in the neighbourhood of this metropolis, who expend thousands of pounds in the erection of greenhouses, and hothouses, &c., are obliged to leave all these things behind them, when it is notorious that they are even permitted to remove trees, or such as are likely to become so, by the thousand, in the necessary course of their trade? If it were otherwise, the very object of their holding would be defeated. This is a description of property divided from the realty."

"Now, if a greenhouse be properly divided from the freehold, it cannot, in the case of a nurseryman, be anything but a part of his stock in trade, which, as we have already observed, is clearly not rateable. The bench were not unmindful of the recent decision in the *Queen v. Haslam* (Justice of the Peace, xv. 24); but they held, though not unanimously, that greenhouses being uniformly treated as part of a nurseryman's stock in trade, the present was distinguishable from that case."

Since the foregoing was written there has been a decision of the highest court of appeal in Scotland, determining that a nurseryman's greenhouses and hothouses are removable by him, being only part of his stock in trade. Now the poor's-rate is only

assessable upon the rent the land would let for, supposing all the stock in trade was removed. Such is our opinion; but you had better consult an attorney, and have your case placed before a barrister.]

FLUES VERSUS HOT WATER—VINES INJURED BY MICE.

I HAVE read with interest Mr. Robson's paper on the above, and I believe that we have not that advantage in hot water over flues which the extra expense should obtain. I have just such a house as Mr. Robson mentions, only wider. It is heated with a flue, and in it we grow Pines all the year; Vines up the rafters in summer; besides forcing a few Dwarf Kidney Beans, and a great many Ferns, hothouse plants, &c. They all appear to have good quarters, plenty of heat, and sufficient moisture. The flues are covered with tiles, which hold water on their tops. All our houses have flues in them, and we have no difficulty about heat.

I have had the management of houses heated with pipes for growing Pines, Vines, Peaches and plants; and here we have the same fruits growing, but heated with flues, and I see no disadvantage from them. Care is required with both, and experience before you can succeed.

Water thrown on hot flues is ruinous to everything, but especially to Grapes in bloom or when swelling. It will kill the bloom and spot the berries.

I beg to inform your worthy correspondent "R. F.," that he has not suffered alone, for my Vines have received just such treatment from mice as his own, only with me it occurred last year. About twelve months since, when I was making preparation for taking in my Vines (which are wintered outside, and the border was covered with fern), I saw that a young Vine, planted the season before, was out of its place. I took it in my hand to replace it, and to my surprise it was completely gnawed asunder. I took off the fern covering, and in so doing we caught the destructives, for there were, as is usual, a pair of mice.

Not satisfied with the destruction of one Vine, they had nibbled away all the bark from the old Vines close to the soil, but not very deeply, some part of the way around. I mixed together a good lump of clay and cowdung, put a thick plaster on the places gnawed, and let it remain on all the summer, and I believe it has done much towards the recovery of the Vines, for I perceive they are not suffering much now.—JAMES HARRIS, Gardener, Machen Rectory, near Newport, Monmouthshire.

DESTROYING WEEDS WITH OIL OF VITRIOL

AND GOOSEBERRY CATERPILLAR WITH WHITE HELLBORE.

I HAVE noticed the remarks in your Journal relative to the use of sulphuric acid for the destruction of weeds on walks; and having repeatedly seen it tried in the course of several years, can fully corroborate what has been advanced as to its excellence for that purpose, if the earth or gravel is not of a chalk or limestone formation.

The acid not only perfectly destroys the weeds, but assists in binding the gravel. Where chalk or lime about the acid is speedily neutralised, and the weeds soon re-appear; but where the soil is not of an alkaline character the effects of the acid are very permanent. A gutta percha watering-pot, being perfectly acid-proof, is far preferable to one of tin; for, as it is impossible to have the interior of the spout and rose protected with paint, these parts are speedily corroded in a metal watering-can.

If the acid and water are mixed in the watering-pot, seven parts of water to one of acid must be first introduced, or the heat evolved during the combination would probably make the gutta percha collapse. It is, perhaps, best to mix the two in a wooden tub, which will not sustain the slightest injury if the water is first put into it.

As the diluted acid not only changes the colour, but also in a few hours almost destroys the texture of cotton or linen fabrics, it should be used with caution. Woollen textures are not seriously affected; and although the colour is changed if spotted with the dilute acid, it will generally return if the material is dressed with a solution of carbonate of soda. The shoes may be effectually protected when using the acid by wearing goloshes, which are not in any way affected by it.

I tried white hellebore powder last summer as a remedy against the gooseberry caterpillar, and found it very efficacious. As soon as I perceived symptoms of the marauders on a tree, I lightly dusted it over with a little of the powder through a muslin bag. One dressing seemed to destroy all the caterpillars in existence at the time of its application.

N.B.—I was careful to obtain hellebore of the previous year's growth, and which had been quite recently powdered. Several persons tried it at my instigation, and it was always perfectly successful.—J. E. B.

HEATING A GREENHOUSE FROM A KITCHEN BOILER.

I HAVE just built a small greenhouse 9 by 6 feet. It is warmed by a four-inch pipe running round three sides and an inch pipe in front. I have connected these by inch pipes with the kitchen boiler about 20 feet off. The whole apparatus works properly, except that I cannot get heat enough—only about 14°—and that only by a most extravagant amount of firing. The boiler is an ordinary kitchen boiler, with a flue underneath and at the back, which, however, is of very little use, as it is difficult to clean-out. To increase the power of the boiler, a few bricks, or something of the sort, may be put inside to diminish the body of water in the boiler.—A CONSTANT READER.

[The diminishing the body of water in the boiler will be an advantage, and then enlarging the connecting-pipes a short distance might be managed with one-inch pipes, but in 20 feet much of the heat is lost before the house is reached. Were the pipes 3 inches, or even 2, it would be better. The pipes then should be packed either in sawdust or surrounded with a trough of wood and the end open into the house, so that the heat given off should have a free inlet there. If at the end near the boiler there were an opening to the external air, you would have a continuous supply of fresh heated air in the house. The flue at the back of the boiler should be kept clean.]

RHODODENDRON CULTURE.

WE have received the following letter from a correspondent, which, being of great interest to others similarly circumstanced, we insert, together with the remarks upon it by one of our regular contributors; but the subject is one which cannot be answered so ably as by those who have the good fortune to have ground, either natural or artificial, so well suited to the well-being of the Rhododendron as that of which our correspondent speaks. His communication runs thus:—

"I should be very glad if you, or any of your readers, could give me any information on the following points with regard to Rhododendrons:—The soil in the neighbourhood of my house is peculiarly favourable to the growth of these plants, which, indeed, sow themselves like weeds all about the place. For the last two or three years I have been raising a number of hybrids between some of the best-coloured of the ordinary crimson varieties, between Barclayanum, for instance (of which I have a magnificent specimen 20 feet high and as many through), Mrs. J. Waterer, Concessum, J. Waterer, and the like, with the idea of planting them in clumps along the road leading to my house. They are now growing so large and so numerous that I am anxious to place some of them at once in their destined positions, and with that idea to know whether, as a general rule, Rhododendron hybrids turn out well. I do not mean turn out new varieties, but handsome bloomers—superior, for instance, to the common ponticum or catawbiense. Hardihood, I believe, most of them possess. Breeding from hybrid varieties is, I am aware, often condemned; but more, I fancy, as producing weakly constitutions than deterioration of bloom. Mr. Standish remarks that nearly all his Gladiolus seedlings have produced handsome flowers. Is this the case with Rhododendrons?"

"Two years ago I tried to produce a hybrid between Rhododendron javanicum and a white catawbiense variety, but failed.

"I read last month in your pages with great interest Mr. Anderson Henry's letter regarding R. Nuttalli. I have several plants of that variety about 1½ foot high. How soon may they be expected to blossom? I fear they are not hardy, although with me the Azalea indica alba thrives and blooms magnificently out of doors, and as well as ever after the winter of 1860.

"I scarcely venture to put another question, which is this:

Are the Rhododendrons from the Neigherries, near Madras, of the same kind as the ordinary Rhododendron arboreum from the Himalayas, and are they moderately hardy? My brother, who sent me the seed some three years ago, was fully persuaded that they would prove hardy in favourable positions.—J. N. M."

[It is no easy matter to give advice in a case like the above, where the inquirer is evidently well qualified by experience to speak on many subjects himself; and favoured as he is by a situation so well adapted for the Rhododendron, and doubtless many other things, it almost excites one's envy to hear of these successes. However, we may say that our correspondent need not be in any fear from breeding from hybrids, for he is quite as likely to obtain good, useful, flowering varieties as if he confined himself to distinct species, and in all likelihood the progeny will be better than if the parents were widely dissimilar. The great object to be aimed at in such matters is to avoid the early-flowering ones, which rarely do well, and there are some varieties shy in flowering. These had better be omitted, unless they possess qualities of a kind worthy of being transmitted to some other plant. In regard to making new plantations of seedlings, it would in a general way be better to take them up and have them in a nursery for a year or two; but, assuming this to be done, there is no reason why your bed of hybrids should not be planted out at once into their permanent quarters. You must not expect them to flower in so small a state as plants raised from layer or grafting. Seedlings of all kinds are more robust than plants from cuttings, layers, or grafting, but they will flower all the stronger when they commence. Your soil must be very favourable for them, and the kinds you mention are good. It is not an easy matter to decide by appearances before flowering which are likely to turn out well; but, in a general way, those having small leaves like R. ponticum are rejected; while those with large and partly-reflexed foliage commonly represent the pale-coloured varieties; those favouring the scarlet breeds resembling, more or less, R. arboreum. These observations do not, however, hold good in every case, and it is only alluded to here as being likely to do so. Practice alone enables those daily amongst them to tell with tolerable certainty which are likely to turn out inferior, and these are, of course, rejected. Rhododendrons have, however, so much improved of late years in all the large nurseries that most of the seedlings sent out for the commonest purpose, as R. ponticum, have imbibed a tinge of the larger kinds and present larger and more varied hues, some being really very good.

In regard to the progeny of hybrids being delicate, there are certainly many exceptions; and, so far as I can give an opinion, it is only where the dissimilarity of the parents was very great that the offspring is sickly; and it is not to be wondered at that R. javanicum and R. catawbiense refused to breed, and, if they had, most likely the issue would have been sickly—much more so than the next generation from the said hybrid.

A good example of this was exhibited in Fuchsia Venus Vietrix, the first white variety of Fuchsia sent out. It was a weak grower, but subsequent seedlings from it possessed a stronger constitution, until the white ones of the present day are as robust as their darker brethren. It is, therefore, an error to suppose that hybrid seedlings are more delicate than their forerunners. Delicacy in constitution is only attained when the object aimed at by the hybridiser is the encouragement of the growth of a particular part of the plant that engenders disease. Thus, for instance, a variegated plant is in general more tender than a green one, and the improved vegetables of the Cabbage and other tribes are much less hardy than the weeds from which they originated.

It is very much to be feared that the widely different forms of the Sikkim Rhododendron will add but little to our shrubberies, excepting as objects of novelty, and many of their qualities are not desirable for out-door decoration. Mr. Cox, at Redleaf, has, we believe, established the hardihood of two or three species, but their appearance is not inviting. We shall, however, be glad to hear how you succeed with R. Nuttalli. To the best of our recollection, R. ciliatum, Russellianum, and another were the kinds that had been out of doors at Redleaf for a year or two, but they fell far short of the healthy and gay appearance the older varieties possessed. It is, however, possible, when their management becomes better known, that they may be turned to better account out of doors than they have yet been, and in favoured situations they are certainly worth the trial; and as the Indian Azaleas do so well out of doors with

the correspondent alluded to, we hope to hear of his success with other plants not usually regarded hardy.

With regard to the Rhododendron from the Neilgherry Hills, its hardihood or otherwise entirely depends on the altitude it was found at. Plants found at the base of these hills require stove heat in England, and midway up the greenhouse will do, and it is possible some of the extreme heights may furnish hardy plants; but as the Indian and Home Government have of late been at considerable expense in importing the Peruvian bark tree to this district, and a friend of the writer has gone to superintend a plantation of Coffee there, it is evident that in the district where these plants are cultivated—and both are destined for the Neilgherry Hills—Rhododendrons capable of withstanding the cold and changes of this country are out of the question. The greatest elevations must, therefore, be the only sites where hardy plants are found; and unless the severities of the cold season of their abode exceed those of an ordinary English winter, there is but faint hope of their doing well out of doors here; for, be it remembered, we have not the hot summer to ripen and perfect the wood which they have in India, so that it would not be prudent to trust more than a few plants to the rigour of an English winter until their hardihood has been in some measure confirmed. Taking into consideration the tropical heats of Madras, I should think the Neilgherry Hills do not attain sufficient altitude to furnish plants hardy enough to withstand the changes they are subjected to in England.—J. ROBSON.]

MESSRS. CUTBUSH'S HYACINTH SHOW.

THE annual Exhibition of Hyacinths at the Highgate Nurseries is one of those sights which no one should omit seeing. It has also the great advantage that one can inspect the floral beauties in quiet, and with a minuteness which is impossible at shows where the public are admitted in any number. Besides, the display of flowering-plants in the house in which the Show is held represents the decorative resources available at the season; and, from their number and excellent arrangement, they afford a good example of what a show-house may be made in skilful hands, and this with materials within the reach of persons with moderate means. Azaleas of various colours, Kalmias, *Dielytra spectabilis*, Acacias, Deutzias, Cinerarias, Cyclamens, early Tulips, &c., fill the whole of the back stage of the house, forming a dense mass of foliage and bloom, reaching nearly to the roof, and alike hiding stages and back wall.

It is, however, in Hyacinths more especially that Messrs. Cutbush possess an eminence, which is certainly surpassed by none; and this season their display of these attractive flowers is in no way inferior to that of last year. Added to this there are several attractive novelties which deserve attention. Where all the flowers are fine, it would be merely repetition to say in almost every instance fine spikes or fine bells. We shall, therefore, confine ourselves to giving a list of the names and colours of the best varieties. These were—

Double Reds.—Duke of Wellington, very pale rose, a large and splendid spike with bells closely arranged; Noble par Merite, deep rose; Koh-i-Noor, a very fine salmon; and Susanah Maria, salmon rose. Jenny Lind, deep rose; and Princess Royal, rose striped with pink, are also excellent.

Single Reds.—Solfaterre, bright orange scarlet; Von Schiller, deep salmon pink; and Victoria Alexandrina, a new crimson, are all splendid kinds, producing immense spikes. Macaulay, from its beautiful colour and size of bells, should be in every collection however small; and the following are also all of the highest excellence:—Amy, bright crimson; Cavaignac, salmon, striped with deep rose; Cosmos, rosy pink; Florence Nightingale, with large pale pink bells, striped with carmine; Howard, orange crimson; La Dame du Lac, pale rosy pink; La Prophète, pale pink striped with carmine; Lady Sale; Lina, crimson; Mrs. Beecher Stowe, deep rosy pink; Norma, delicate pink; Pelissier, a new crimson scarlet; Princess Charlotte, delicate rosy pink; Princess Clothilde, pale pink, striped with carmine; Queen Victoria, pale pink striped with red; Queen of Hyacinths and Robert Steiger, bright crimson. Aurora Rutlans, dark red; Belle Quirine, bright pink; Circe, salmon pink; Desdemona, dark crimson; Duchess of Richmond, dark red; Duke of Wellington, rose with carmine stripes; Johanna Christina; Madame Hodgson; Monsieur Feasch, pink; and Sultan's Favourite, rose striped with deep pink, can also be highly recommended.

Double Blues.—Garrick; Laurens Koster; Sir Colin Camp-

bell, light blue; Van Speyk, pale blue striped with dark blue are of the best. And Belle Mode, porcelain; Comte de St. Priest, light blue; General Antinck, pale blue; Paarlboot and Prins Van Saxe Weimar, dark blue, are likewise excellent.

Single Blues.—Argus, bright blue, with white eye; Baron Von Tuyl; Charles Dickens; Couronne de Celle, azure; Grand Lilas, and Orandates are the most choice. Bleu Mourant is also a very useful dark blue.

Double Whites.—Of these Sir Bulwer Lytton, cream, with a purple eye, is a splendid new variety. Cœur Noir, pale bluish; La Tour d'Auvergne; La Vestale, and Prince of Waterloo, are all excellent.

Single Whites.—Alba Maxima, pure white; Gigantea, deep bluish; Grandeur à Merveille; Madame Van der Hoop; Mont Blanc; Paix de l'Europe, and Snowball, are all of the highest excellence; the last-named in particular has the broadest segments of any Hyacinth known. The best of the others are Cleopatra, deep bluish; Elfrida, creamy bluish; Queen of the Netherlands, pure white, new and fine; Seraphine, pale bluish; Tubiflora, bluish, very large bells, stained on the outer side with purple; and Voltaire. Mirandoline is also a very good pure white.

Lilac and Mauve.—Of these Haydn and Prince of Wales take the first place; the former is of a splendid colour, and has a large spike. Dandy, bronzy lilac, is also good.

In *Blacks*, Othello is an excellent double; and of the single flowers General Havelock, of the deepest purple, is a splendid sort. La Nuit, Mimosa, Prince Albert, and Von Humboldt, deep purplish-black, are all first-rate.

In *Yellows*, Duc de Malakoff is new and very fine. Ida and Victor Hugo, are fine deep yellows. Aurora, pale straw, striped with pink, is also excellent.

Of the new varieties, Maria Theresa is a capital pale pink, with light carmine stripes. Prince of Orange, of a deep rose, with a bright crimson stripe up the centre of each petal, is a very fine double variety; and so is Rouge Eclatante, of a splendid deep crimson. Estella, another double red, is of a very delicate rose, with a narrow pink stripe up the centre of each petal. Fair Maid of Denmark is a most beautiful pure white, with immense bells; and San Francisco, a bright yellow, with a close spike, is a great acquisition in that colour. Feruk Khan has a very close, fine spike; the colour a dark violet purple. Pieneman, with very large porcelain blue bells, is also very fine. Lord Palmerston, a single bright blue, has a fine close spike; and Marie, deep blue, with an indigo stripe, is also good. Lamplighter, a purplish-black, with a very distinct white eye, appears a promising sort; but the spike which we saw was small, owing to the small size of the bulb which produced it. Probably another year it will improve in size, and if so the variety will prove an acquisition.

In addition to the Hyacinths, several very pretty varieties of early Tulips are also shown, as well as the collection of Amaryllids exhibited at Kensington.

We cannot do better than conclude by recommending our readers not to lose the opportunity of seeing Messrs. Cutbush's Exhibition, which will continue open till the end of the month.

METEOROLOGY OF CARDINGTON, BEDFORDSHIRE.

THE following table shows the monthly and annual fall of rain at Cardington in 1862, and the average during the last seventeen years. The greatest quantity was in 1848, 30.860 inches; and the smallest quantity in 1854, 16.245 inches: being 5.805 inches below the average of the seventeen years. The greatest monthly average fall is in October, July, and August; the least in February, March, and December; and the year ending December 31st, 1862, is 0.565 below the average:—

Month.	1862.	Average in 17 years.	Month.	1862.	Average in 17 years.
	Inches.	Inches.		Inches.	Inches.
January	1.350	1.661	August	1.820	2.337
February	0.320	1.089	September	2.310	1.880
March	3.115	1.300	October	2.410	2.624
April	2.110	1.704	November	0.980	1.634
May	2.750	1.969	December	1.250	1.419
June	1.810	2.064			
July	1.260	2.378	Total amount...	21.485	22.050

The following table shows the highest and the lowest readings

during the last seventeen years, of a self-registering thermometer at the height of 5 feet from the ground, and protected from radiation and rain; the highest readings of a self-registering maximum thermometer in the full rays of the sun, and the lowest readings of a self-registering minimum thermometer on the grass during the last thirteen years, and also the mean temperature, the number of days on which rain fell, and the quantity of rain of each year for seventeen years.

Years.	Maximum in Shade.	Minimum in Shade.	Maximum in Sun.	Minimum on Grass.	Mean Annual Temperature.	Number of days on which rain fell.	Rainfall in Inches.
	deg.	deg.	deg.	deg.			Inches.
1846	89.0 on July 31.	17.0 on Dec. 13.	.....	.....	51.5	164	25.070
1847	83.0 on July 12.	18.0 on Feb. 9.	.....	.....	49.0	135	20.810
1848	85.0 on July 6.	18.0 on Jan. 29.	.....	.....	48.9	196	30.860
1849	83.4 on July 8.	16.8 on Jan. 5.	.....	.....	48.5	172	22.324
1850	83.5 on July 16.	19.4 on March 26.	123.0 on June 20.	8.3 on March 26.	48.0	144	18.450
1851	78.0 on June 27.	21.0 on Nov. 19.	129.0 on June 30.	11.0 on Nov. 19.	42.6	148	17.980
1852	91.0 on July 4.	19.5 on March 6.	119.0 on July 9.	9.8 on March 6.	49.5	161	30.705
1853	81.5 on June 11.	13.0 on Dec. 28.	115.5 on June 16.	5.0 on Dec. 28.	47.2	171	21.185
1854	86.0 on July 25.	11.0 on Jan. 2.	117.5 on Sept. 11.	1.0 on Jan. 2.	49.0	135	16.245
1855	84.5 on May 26.	3.0 on Feb. 17.	118.5 on July 8.	4.0 below zero Feb. 17.	46.4	140	19.890
1856	91.4 on Aug. 2.	16.5 on Dec. 27.	121.0 on Aug. 2.	3.0 — Dec. 27.	48.6	151	20.680
1857	88.6 on June 28.	18.6 on Jan. 29.	125.0 on June 28.	6.4 on Jan. 29.	50.7	145	25.120
1858	95.0 on June 16.	15.0 on Nov. 24.	132.4 on Aug. 12.	2.0 on Dec. 24.	49.1	125	17.465
1859	92.0 on July 12.	6.0 on Dec. 19.	131.4 on July 17.	1.0 on Dec. 19.	49.8	146	22.480
1860	76.4 on July 15.	3.6 on Dec. 25.	116.6 on May 19.	1.0 below zero Dec. 25.	46.6	196	25.080
1861	86.0 on Aug. 12.	10.0 on Jan. 8.	120.6 on June 19.	4.0 on Jan. 10.	48.8	161	19.020
1862	80.0 on July 26.	16.0 on Jan. 19.	125.0 on Aug. 3.	5.0 on Jan. 19.	49.1	181	21.485

—J. B. McLAREN, Observatory, Cardington, January, 1863.

RHODODENDRON GLAUCUM (GLAUCCUS-LEAVED RHODODENDRON).



Nat. ord., Ericacæ. Linn., Decandria Monogynia.—A small evergreen and very handsome shrub, of the average height of 2 feet, with branches of the size of a goose-quill. The leaves are oblong or broadly lanceolate, with a mucro, about 3 inches long, and 1½ inch broad, deep green above, and remarkably glaucous beneath. The umbels of seven or eight flowers grow from the ends of the branches, the flowers being a “pale pinkish-purple,” the tube campanulate, more than an inch long, and about as broad across the spreading limb of five rounded emarginate lobes. The whole plant has a powerful resinous smell. From Sikkim Himalaya, on the rocky depressed ridges of Chola, Lachen, and Lachoong, at an elevation of from 10 to 12,000 feet. Introduced, we presume, in 1850. Flowers in June.—(Gardener’s Magazine of Botany.)

HASSARD'S PORTABLE CHAIR.

THIS chair is one of the most complete of its kind ever invented, combining all the qualifications of portability, lightness, and great strength; and, from the ready manner in which it folds-up and the small space it occupies when folded, offers a great acquisition over the ordinary stools used as seats in gardens. For invalids it is invaluable, the back being a most useful and comfortable addition not generally met with in articles of this kind; and as there is no strain on any part of the chair, either when folded or not, it is almost, if not quite, impossible to break it. This has had practical proof in the original chair, which served as a camp chair for some years in the colonies, Turkey, and the Crimea, and can now be seen in as sound a state as when it started.

H.R.H. the Prince of Wales, in his late visit to Egypt, took several with him, and no complaints have been registered against

them. For horticultural fêtes its use would be invaluable, as the small space it occupies when folded enables its being easily carried, or it can be stowed away in a tool-house or other convenient building; and being made of wood, it possesses a lightness which the iron portable chairs do not.

Its uses are as follows:—1, As an ordinary chair; 2, With the back put down it makes an excellent table to a person sitting on the grass, as at a pic-nic; 3, It can be sat upon also when entirely folded-up; or, 4, makes a lounging chair if in this position the back only is put up.

Its price is only 12s. 6d., and its transformations so various that we should call it the *Protean Chair*. Major Hassard, the inventor, lives at Hilsa, near Portsmouth, and we have no doubt he would answer any relative inquiries.



Fig. 1. Shows the chair up.

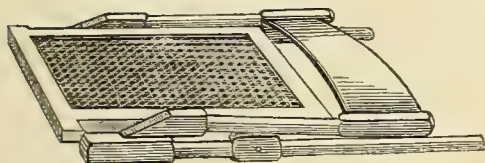


Fig. 2. Folded on the ground.



Fig. 3. As a table.

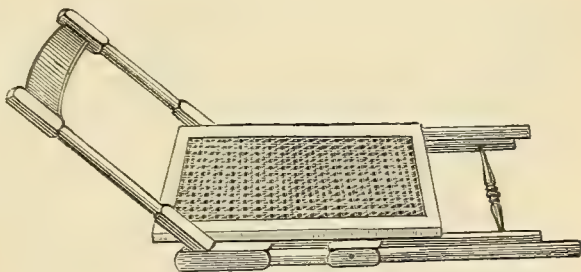


Fig. 4. As a seat on the ground.

REMOVING A VINE LONG PLANTED IN A GREENHOUSE.

THE following is in answer to the questions of "F. S."

That you can remove this Vine without injuring it is not likely. If the Vine is very large and old-established, it is just as little likely that you can remove it with profit. If only a few years planted, and you resolve to do the job carefully, then the old Vine would be better than a young one. Without that care and trouble being expended, it would be best every way to let the old Vine alone and plant some fresh young ones, as their expense would be little more than that involved in moving the old one. These young Vines could not be expected to bear the first season. With proper care bestowed, the old one might do so and flourish well afterwards.

Though we can add nothing to what has been previously and lately stated, we will, to oblige you, answer your questions. And first as to soil. Good fresh soil of any kind will grow the Vine well. The chief point to secure is dryness by drainage. The best-flavoured, if not the largest, Grapes are obtained from districts and positions where there can be no stagnant water.

This dryness secured, the earth is a matter of less importance. A good loam, such as may be obtained from a roadside, will answer well. The soil that grows good vegetables and the common fruits will grow good Grapes. The fresh soil, if obtainable, is the best. That should be from 18 to 24 inches deep, and if outside the house it should slope to the sun. In late Numbers, and in another week or so, you will see much on border-making. The chief point, however, is to avoid stagnant water. The soil may have a tenth of its bulk of rough pieces of brick, and another tenth of fine brick and lime rubbish well blended together, and for every four cartloads of compost there may be a bushel of broken bones. Suppose the Vines are to be planted, the roots may be nicely spread out about 6 inches from the surface, and a little finer and richer soil strewed over them. Extra strength afterwards we would give by rich top-dressings and manure-waterings.

Now as to lifting your Vines. We wish you would have asked our advice any time between the end of September and

Christmas, as the chances would have been more in your favour. However, the fact that the buds will soon burst of themselves is not so much against you as at first sight would appear, as that will cause growth to take place all the sooner, and therefore you will only have to assist Nature in her operations. Not a day, therefore, should be lost. The first thing to do is to secure the head of the Vine and keep it as cool as possible. Then begin in front of the Vine-roots, and dig out a trench deeper than you expect the roots to reach. With a pick carefully pull down the soil and throw it behind you; and as you come to the roots save them, carefully tracing them right up to the bole or stem, and wrapping the roots as you disentangle them into cloths or mats, to keep the fibres you can save from being dried and killed by the cold air. This is no such difficult job as it would seem from our description to be.

Having taken up and removed the Vine to its place, the first object is to put the head into the desired position, and the second is to lay out and plant the roots. In such a case we would depart from the above simple mode of making a border, and 6 inches below the place we intended for the roots we would incorporate 2 or 3 inches of fresh horse-droppings if they could be found, so as to yield a mild gentle heat as well as enriching qualities. Place a couple of inches of fresh light soil over that compost, and on this lay out the roots regularly, packing them nicely, and cover with a couple of inches of soil. Then water moderately, so as to damp the roots, with water at about 140°, and as soon as settled cover with 5 inches more of soil. When that is done place 15 inches of hot fermenting material over the border, and, if possible, thatch the border, or use hurdles or cloth, to throw off the cold rains. If the job is thus done, a thermometer sunk 6 inches in the border would most likely show a temperature of from 75° to 80°, which would furnish a stimulus to root-action. The roots thus attended to, the next point is to keep the head of the Vine as cool as possible by moistening the head and keeping it shaded from the sun, so that roots may be forming in the border before the buds are much advanced. In this will consist the success. Without such care the old Vine had better be left alone.—R. FISH.

CAPE BULBS.

A CORRESPONDENT, writing from Liverpool, asks our advice on the management of the bulbs just received from the Cape of Good Hope:—*Antholyza præalta* (hardy); *Amaryllis revoluta*; *Agapanthus major* (greenhouse); *Albuca filifolia* (greenhouse); *Brunsvigia falcata* (greenhouse); *B. ciliaris* (greenhouse); *Calla æthiopica* (greenhouse); *Disa grandiflora* (greenhouse); *D. barbata*; *D. purpurea*; *Babiana rubra* (greenhouse); *B. purpurea* (greenhouse); *B. rubrocyanea* (greenhouse); *B. mixed*; *B. villosa* (greenhouse); *Gladiolus blandus*; *G. natalensis* (greenhouse); *G. hirsutus* (greenhouse); *Hemantus tigrinus*; *Hesperantha cinnamomea* (greenhouse); *Hypoxis flava*; *Geissorhiza rochensis*; *G. purpurea*; *Satyrium fragrans*; *S. cucullatum* (greenhouse); *Melanthium* (greenhouse); *Sparaxis* var.; *S. bicolor* (greenhouse); *S. purpurea*; *S. grandiflora* (greenhouse); *Ornithogalum caudatum* (greenhouse); *Ixia purpurea*; *I. ciliaris*; *I. var.*; *I. maculata* (greenhouse); *I. viridiflora* (greenhouse); *I. versicolor*; *I. flava* (greenhouse); *I. fragrans*; *Lachenalia purpurea* (greenhouse); *L. purpurea* var.; *L. alba*; *L. pendula* (greenhouse); *L. pendula* var.; *Trichonema cruciatum*; *Oxalis rosea* (greenhouse); *O. versicolor* (greenhouse); *O. alba major*; *O. alba minor*; *Nerine sarniensis* (greenhouse); *Tritonia crocata* (greenhouse); *T. fenestrata* (greenhouse); *Watsonia plantaginea* (greenhouse); *W. præcox*; *W. rosea major*; *W. rosea minor*; *W. Meriana*; *Morsea bicolor*; *Watsonia splendens*; *Wurmbea spicata*; *Anomatheca juncea* (greenhouse); *Babiana flava*; *B. plicata* (greenhouse); *Tritonia crispa* (greenhouse); *T. crispa* var.; *Lapeyrousia purpurea* (greenhouse); *Ornithogalum niveum* (greenhouse).

In reply to the inquiry of our correspondent, we may say that most of the *Ixias*, *Sparaxis*, and *Antholyzas* are hardy, and might be planted out into a warm border after being nursed awhile in a hotbed and then in a cold frame. This nursing in pots, we expect, will be necessary in order to compensate in some measure for the injuries sustained in the journey. Most of the other bulbs will require a greenhouse, especially such as the *Watsonias*, *Hemantus*, and others, that, iris-like, do not form ripened bulbs, the foliage never entirely dying down. Such bulbs as *Amaryllises*, *Oxalis*, &c., which ripen and

require a period of rest, will nevertheless benefit much by a considerable addition of heat at the growing time; for, though most of Cape plants will flourish and do pretty well in our greenhouses, most of them do better when subjected to the heat of the stove or hotbed at one time, and they will stand several degrees of frost at another. While, therefore, the bulbs are growing it would be better to keep them in a hotbed, removing them to a cooler place when they show flower; and when at rest they may be placed out of doors altogether. Those acquainted with the extremes of temperature experienced at the Cape will easily understand this. It would not, however, be advisable to suddenly subject bulbs and pseudo-bulbs recently unpacked after a long confinement to great heat. Rather let them be all potted in sandy peat, and placed first under a dark roof in a cool place, gradually increasing heat and light as the plants begin to grow.

FRUIT-TREE BORDERS CROPPED WITH VEGETABLES.

THE following inquiries relating to this very important subject being of a similar kind to many others we receive, we have called the attention of one of our regular correspondents to the matter, and subjoin his remarks, together with that of the querist, whose case is far from being an isolated one:—

"The garden in my charge is divided into four squares, with wire trellises round each square, on which are trained Apples, Pears, and Cherries, with a flower-border 5 feet wide between the trees and walk. Our wall-borders are 21 feet wide, with a fall of from 18 inches to 2½ feet, which are planted thus:—Half of south wall Peaches, the other half Pears; north wall, Plums; west wall, Cherries; east wall, Pears.

"The borders are entirely devoted to the growth of vegetables, except the west-wall border, which is under Strawberries.

"I think vegetables are highly injurious to trees, owing to spade-work being necessary in vegetable culture.

"I was thinking of planting two rows of fruit trees on each border—that is, Pears on the south and east, Plums on the north, and Cherries on the west, and training all on trellises having a fall to the walk, so that neither the front trellises would shade the back nor the back trellis would shade the wall trees; also, to have a flower-border in front to correspond with the other side of the walk. The fruit trees round the squares are upright espaliers about 5 feet high.—S. H."

[So far from your case being a solitary one of being obliged to crop your fruit-wall borders with vegetables, I firmly believe that ninety-nine out of every hundred are in the same predicament. That it is hurtful to the fruit trees I believe no one will deny; but the anxiety to have Peas a few days sooner, or a greater certainty of Cauliflowers standing the winter well, or to have Dwarf Kidney Beans in good time, or, in fact, the many things required by the household in sufficient abundance in season and out of season, induces us all to crop borders that ought to be left alone; and that very often to the permanent injury of the Peach and other trees, whose roots ought to have unmolested possession of the border. This, however, is one of those unfortunate choices between difficulties which occur in all callings, and is solved in accordance with the individual requirements of each place. If a crop of Potatoes, Peas a few days sooner, and the same with Cauliflowers, Lettuce, and the like be of importance equal to that of good Peaches and Nectarines, the preference given to the former must not be found fault with. If, however, fruit be most wanted, some sacrifice of the vegetables must be made, or a sort of compromise entered into. The last-named measure is that most generally adopted, although even in that vegetables are often allowed to usurp more than their just share of space, and our correspondent seems disposed to enter into a compromise when he suggests occupying the wall-border by trellises for training fruit trees of other kinds. In many cases, however, this would be objected to; and as vegetables must be had, it is the duty of the manager to contrive to injure the wall trees as little as possible in the endeavour to secure both fruit and vegetables. This is often done, care being taken not to crop the ground too heavily, and to manure accordingly. It is, however, better to allot a space of 6 feet from the wall to be kept free from all growth excepting that of the trees.

Our correspondent's plan of having a trellis for trained trees, instead of a vegetable-border, is not a new one. The late Mr.

Errington strongly urged it in many of his papers in the early Numbers of THE COTTAGE GARDENER; but he advocated a sort of table trellis. Arched trellises enclosing a walk exist in more places than one, and answer very well. The writer once had a sort of half-arched trellis overhanging the sunny side of a walk. This was also very successful; in fact, so obedient are most of the hardy fruits, that they can be made to assume almost any shape. Some of those already tried are as much to be admired for their novelty as their utility. However, I have no doubt that the roots of a Pear tree will do less injury to those of the Peach than the gross-feeding Cauliflower and similar vegetables; besides which, with only trees on the border, the necessity for digging deep does not exist; in fact, it is questionable whether it is necessary to dig at all or not. I once knew a gentleman—until very recently the oldest member of the Horticultural Society—who was so impressed with the propriety of letting the roots of such trees alone, that he had the Peach-tree border turfed over, and, I believe, it answered very well. Much, however, depends on the character of the soil and subsoil for the well-being of fruit trees, and there may be cases where a slight crop of vegetables, not deep-rooting, may do no harm. Healthy vigorous trees root much deeper than is generally supposed. Some men digging a well not far from whence I am writing are finding healthy useful roots at the depth of upwards of 28 feet! the soil being a sandy shale. The adjoining trees are Sycamore, Poplars, Fir, Birch, &c. The surface soil being good, these roots have not descended this depth for lack of substance near the top, but by their healthy appearance they have done so in consequence of relishing the nourishment met with there. When, therefore, the subsoil of a wall-border is one that suits the Peach and other trees planted thereon, a slight crop of vegetables does not do so much harm; but where the subsoil is of a contrary character, and the trees must thrive on the surface naturally or not at all, then by all means leave them the unlimited use of the latter, without any compromise whatever; and the condition of the trees, with other tokens, will alone enable the manager to determine how far this state of things bears on his case, and to act accordingly.—J. R.]

CINERARIA LEAVES INJURED.

I NOTICE an answer to one of your correspondents respecting his Cineraria leaves being injured. For his information (should this catch his eye), I beg to say that about the first week in January the frost was too sharp for me, and got into the greenhouse. In the morning, on going to look round, I observed the Fuchsia shoots looked very stiff. I gently tapped the pots of one or two of them, and the greater part of the shoots tumbled off; but the Cinerarias did not appear then to have suffered much. However, I noticed in the course of a fortnight that some of the plants did not grow at all, and others very little; while some did not seem affected in the least, and in a few more days the outer edges of the leaves appeared to be gradually mouldering and crumbling away, giving the plants, though nicely showing bloom, a very shabby appearance. Some of them are now all right again, but others have never recovered. I attribute this to their having been wetter than the others; consequently they felt the frost more than they would have done had they been dry.—AN AMATEUR.

THINNING BLOSSOM-BUDS OF FRUIT TREES.

I HAVE Peaches, Apricots, Nectarines, Plums, Cherries, Pears, &c., in a well-ventilated lean-to (south aspect) orchard-house in pots plunged in the borders. They are particularly full of bloom-buds, which, owing to the mildness of the late weather, began early in February to swell, and so water was given very moderately and gradually, and they were fast opening before the late change to cold. Some Pears of choice kinds are the only trees not repotted here last autumn. They came from London without balls of earth, and with the roots quite exposed; they were potted immediately, late in December, and are now crowded with bloom just showing the pink tinge.

It is quite impossible any of the above can bear one-tenth the blooms shown, and I wish to have your opinion as to the advisability of now removing them. My gardener says he would not touch one, but thin them after the setting. I recollect Mr. Rivers recommending thinning-out with sharp scissors fully one-half of Cherry-buds before they opened. If this be good prac-

tice, why not deal so with other kinds, especially in the case of the Pears I have mentioned, as it is very questionable how far the roots are established? My notion is that the merely moderate strength of a tree might be rendered of no avail in having to expend itself on such a vast quantity of bloom, though it would be equal to a very reduced quantity. Can any harm be done to the trees by my suggestion?—MANCHESTER.

[In the mere expanding of the blossoms there is little strength of the plant exhausted. We would, therefore, compromise the matter, and wait until the blossoms are so far opened as to show which have the strongest stalks, and the most prominent incipient young fruit; then, rejecting the smaller ones, thin more than half away. When these have set and have begun to swell kindly, then thin them out again, leaving about a dozen or so on each plant, or more, according to the strength. If you were sure of all the blossoms being fertile you might thin earlier; but even in the case of Cherries, many of the blossoms can never set, from imperfect organisation.]

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

PYCNOSTACHYS URTICIFOLIA (Nettle-leaved Pycnostachys).—*Nat. ord.*, Labiate. *Linn.*, Didynamia Gymnospermia. Native of Mount Zamba in tropical Africa. It has been found there at an elevation of 3000 feet, and will probably flourish in our greenhouses. Its flowers are dark blue, and appeared at Kew in January.—(*Bot. Mag.*, t. 5365.)

IMPATIENS BICOLOR (Two-coloured Balsam).—*Nat. ord.*, Balsamaceæ. *Linn.*, Pentandria Monogynia. Native of the island of Fernando at an altitude of 4000 feet. Flowers appeared in December at Kew; they have a white mouth and purple lip.—(*Ibid.*, t. 5366.)

MONOCHÆTUM HUMBOLDTIANUM (Humboldt's Monochætum).—*Nat. ord.*, Melastomaceæ. *Linn.*, Octandria Monogynia. Native of Caracas. Flowers in the stove in November and rather later. Flowers reddish-purple.—(*Ibid.*, t. 5367.)

WELWITSCHIA MIRABILIS (Wonderful Welwitschia).—*Nat. ord.*, Gnetaceæ. *Linn.*, Polygamia Monadelphia. Native of Damara and Cape Negro in western tropical Africa. This marvellous plant, it is said, sometimes measures 6 feet across the apex of the trunk, with ribbon leaves 2 and even 3 fathoms long. Mr. Anderson, the eminent African traveller, says:—"It is only found in one single locality—that is, as regards Damara Land, which locality is exceedingly circumscribed. It grows, moreover, in sandy places, and luxuriates when it can find a few stones where to fix its extraordinary tap root, penetrating often several feet deep, so that it is indeed a work of labour and patience to extract one single plant. I have been thus occupied more than an hour, and even then I have come away with only a portion of the root. The leaves attain a length of several feet, a small portion at the point only being withered; in other respects they are evergreen; they are straight-grained, and you can tear them from top to bottom without deviating a single line from a straight course. Rain rarely or never falls where this plant exists. I have crossed and recrossed Damara Land throughout its entire length and breadth, but only found the plant growing on that desperately arid flat, stretching far and wide, about Waalvisch Bay, or between the twenty-second and twenty-third degrees of south latitude. It is most common about the lower course of the river Swakop."—(*Ibid.*, tt. 5368, 5369.)

ROSE COMTESSE OUVAROFF.—This variety of the Tea-scented group was raised by M. Margottin. Colour, a soft creamy rose.—(*Floral Magazine*, pl. 137.)

PICOTEE JESSIE; CARNATION SAMUEL MORETON.—The first, raised by Mr. Turner, Slough, is a medium-edged purple. The Carnation was raised by Mr. Addis, but is in Mr. Turner's list. It is well and regularly marked.—(*Ibid.*, pl. 138.)

VERBENAS FLORA, ROSALIE, AND PURPLE EMPEROR.—*Flora*, crimson scarlet with white centre; *Rosalie*, reddish-purple, but crimson towards the centre, which is white; *Purple Emperor* is plum-coloured with white centre. They will all be let out by Messrs. Low & Son, of Clapton.—(*Ibid.*, pl. 139.)

THUNBERG'S TRICYRTIS (*Tricyrtis hirta*).—Sent by Mr. Fortune from Japan to Mr. Standish, who believes it will prove a hardy border plant. Flowers pearly white, thickly spotted with reddish-purple.—(*Ibid.*, pl. 140.)

VERBENAS—*Lord Leigh*, raised by Messrs. S. Perkins & Sons, Park Nursery, Coventry; crimson scarlet, yellow eye. Awarded a first-class certificate by the Floral Committee. *Lord Craven*, produced by Messrs. Downie, Laird, & Laing, of Sydenham and Edinburgh. "Decidedly the finest of purples."—(*Florist and Pomologist*, ii., 25.)

CHERRY—*Belle Agathe*, raised by Capt. Thiéry, of Haelen, Belgium. Of the Bigarreau character, but skin more red, flesh hard and crackling. Birds do not touch the fruit. Tree hardy and abundant bearer, ripening its fruit about the middle of September.—(*ibid.*, p. 32.)

NEW BOOK.

THE PHANTOM BOUQUET :

A Popular Treatise on the Art of Skeletonising Leaves and Seed-vessels, &c. By E. Parish, &c., Philadelphia.

THIS is well-named, for the embellishments are very beautiful and very disembodied, whilst the literary portion is equally phantom-like. There is nothing whatever new in it. The directions for skeletonising are merely the old one, requiring weeks and months for effecting the putrefaction of the pulp of the leaves under water. How old the process is may be learned from this extract.

"Some of the old London books we have lately forgotten to read give accounts of the identical process, and tell us that, as long ago as 1645, Marcus Aurelius Severinus, Professor of Anatomy and Surgery at Naples, turned his attention to the subject, and published a figure of a leaf thus delicately prepared. But this ingenious disciple of Æsculapius, according to the fashion of his time, kept the process a secret; and so we owe, probably, the first published account of the method of preparing plant-skeletons to a Dutch naturalist, Fredrick Ruysch by name, who in 1723 first gave to the world the announcement that, through the putrefactive fermentation promoted by warmth and moisture, the pulpy matter of the leaf may be loosened, so as to be separated from the fibrous skeleton, which may thus be preserved unimpaired."

We believe that a much shorter time might suffice to effect the skeletonising, and the process to attain this is worth trying to discover, for the results are beautiful, and, as Mr. Parish remarks, "adapted to embellish a home of taste."

NAMING HERBACEOUS PLANTS.

THE return of the early spring flowers reminds me of one of my gardening difficulties, which the Editors may kindly assist me in elucidating. I came into possession of an old place in the country a few years back, and amongst the many traces of the cultivated taste of my predecessor, not the least prized is the store of nice herbaceous plants which adorn the flower-borders of our small garden for the greater part of the year.

Having neither space, time, nor inclination to go into the modern bedding-out system, I would like to take stock, with the view of adding to my collection such noteworthy specimens as I might see from time to time noticed in your pages or otherwise; but the evil is that I am ignorant of the names, scientific as well as vulgar, of very many of those I possess. This I was forcibly reminded of not long ago, by ordering a lot and finding, as many came into flower, their duplicates already in the borders.

I thought I had hit upon an expedient last summer that would have thrown light upon my darkness. The principal foreman in the nursery from whence I occasionally procured a few florists' flowers, was a most intelligent, obliging fellow, thoroughly versed in horticulture, from his aristocratic titled favourites down to the little "Hyssop that springeth out of the wall," I assumed, judging from the discrimination he displayed, opening my eyes to the unseen distinctions between the "additional substance," "cleanness of club," "breadth of belt," "brightness of eye," &c., of this Pansy or that, or other florists' flower, second only to the style of your gifted Deal contributor. It was, therefore, with much confidence that I one day went off to town with a small bouquet as a first instalment, which I spread out on a frame-light before him, and stood note-book in hand ready to begin my list. Judge of my disappointment, taking up one after the other, with that curious puzzled look one could imagine in a geologist examining an antediluvian fossil, the only result

arrived at was, that in his opinion one of them "was some sort of Geranium." He, however, politely asked me to leave the flowers, and he would endeavour to get them named for me by some old gardener; but I fear the race of our good old "blue aprons" must be wearing out, as I have not heard from him since. I would, therefore, feel much obliged were you, or any contributor, to recommend any plain cheap old work on the subject, or otherwise kindly advise—TOWN-BRED.

FEATHERED HELPS IN A GARDEN.

I AM obliged by your insertion of my inquiry upon this subject, which shows that you deem the matter not unworthy of some attention; and I feel encouraged to put my own ideas into some more definite shape, more especially as I have since had an opportunity of asking the opinions of practical men on the Undercliff, from which place I am now writing. You will deal with my further remarks as you see fit.

I am afraid that no definite views are entertained by gardeners upon either branch of the question—either the domestication of birds for useful purposes in a garden, or the proper treatment of the race of small birds generally as wild. Upon the first point one gardener approves of gulls; another prefers the sandpiper, but that is, I believe, a migratory bird, and an attempt to keep it continually is, therefore, forced and unnatural; another likes the owl, as not only destroying mice, but anything else that can be picked up, and especially as working at night. Some think ducks would be useful upon special occasions and at special times. None like bantams, even Sebrights; and the habits of Guinea fowls, as non-scratchers, do not seem to have been noticed. Of course nobody ever dreamt that poultry in general could be "helps," as our Bristol friend assumes in his chapter of grievances. This, therefore, seems an open question; but upon the use of gulls I may mention that I have just seen a pair in a garden, and am assured by a medical friend, their owner, that, in addition to an unremitting attention to all vermin, one of them is as good as a watch-dog; for if an intruder finds his way into the garden at night, the bird screams, as long as he remains, loud enough to wake all the neighbourhood. But this part of the subject must depend upon local circumstances; for such birds may well be kept in small and enclosed gardens, when there would be difficulty in doing it in larger establishments. The principal question, therefore, is the proper treatment of the feathered tribe in general, and the views generally expressed by your correspondents show that it is a serious one. The views I have heard expressed are certainly in favour of birds, especially the soft-bills, as doing infinitely more good than harm, although requiring strict watching at particular times.

I rather think a true philosophy points to a protection of the race, accompanied by a complete control of their habits, in matters upon which our reason should guide their instinct. Do they not rank with the other inferior creatures which God has given for our help? Are they not all the year working for our benefit? Has the farmer or the gardener any cheaper labour than theirs? and is not the labourer worthy of his hire, in their case as well as in all others? We give our domestic animals extra food sometimes; we give our labourers extra wages at haytime and harvest; and why should not somewhat of the principle be extended to our birds? Are they not entitled to the food necessary for them? True, in the main they find it by living upon our insects; but if their want of intelligence leads them to be mischievous at seed-time and in a blossoming season, is not that a defect which our intellect should lead us to control rather than to visit the mistake with destruction? And, if when fruits are abundant they take their share, what more is it than pursuing the analogies of life? and what more is it than their right, always taking care they do not, in their want of knowledge of the properties of things, take too large or too wasteful a share? Surely it would be a great misfortune if the race were destroyed; and that is the logical sequence of the arguments against them. The race may be properly kept down like that of any other of the inferior animal creation when necessary, but that would be better done by a judicious bat-folding, when the hard-bills could be selected for puddings, and the soft-bills sent back to their work, rather than by a wholesale and indiscriminate slaughter.

I was yesterday walking through the grounds of a gentleman whose position in the scientific world entitles any opinion of his to profound respect, and who is, besides, an accomplished horti-

culturist, and possesses as fine a collection of out-door fruits, I should think, as any gentleman in England. I said to him, "How do you manage with the insect tribe with all your fruit?" His ready answer was, "Oh, I am very much in the habit of trusting to my friends the birds." "But do they not plunder you of a great deal?" "Well, of course they take their toll, possibly more than some people would like; but I am not at all sure that they take more than they have a right to," was his reply.

May not the question, then, be resolved into an adaptation of Loudon's advice as to Turnips and the turnip fly, "Sow enough for the fly and yourself too?" I think it may, and, without further argument, I have determined to try; and at the risk of being considered Utopian or anything else, and without heeding any amount of ridicule, I will give it a fair trial for at least a year, and will then report to you the result. I have a small garden here, containing a few dwarf standard Figs just coming into bearing (an immense temptation to birds), as well as good Jersey Pears, and other dwarf trees suitable for a small garden, and, contemplating a permanent residence here in the course of the summer, I am about to complete my stock both of top and bottom fruit, and I will make a point of increasing that stock so as to allow my birds 25 per cent., and will sow seeds in a like proportion. I will try hard to temper my fondness for the feathered tribe with a firm resolve to keep the 75 per cent. for myself and my friends, and I rather think the birds will have to rise early in the morning for their share.

I may add that I have bespoken a pair of gulls for day-labourers and an owl for night, and if I live the prescribed time I will carefully report the result of my efforts.—H.

I SCARCELY thought my experience, limited as it is to the practice of allowing ducks to range in my garden, was sufficiently extensive to be worth while recording in reply to your request for information on the use of feathered helps in a garden. But I see in your No. 191 a communication from R. Welch, Bristol, so thoroughly and completely condemning ducks, along with others of the feathered tribe, that I cannot refrain from saying that for several years past I have made it a rule to allow ducks, at various ages suitable to the season, to range at perfect liberty in my garden. I would not be without them on any account, but discrimination is required in admitting them. During the winter months—say from the first severe frost up to the end of February, or even into March, they may be admitted freely; after that time the old ones must be rigidly excluded, and may be allowed to run in the grass fields, where, during the breeding season, they do an immense amount of good.

So soon as you have ducklings they may run in the garden freely instead of their parents until they are five or six weeks old, but not longer; to be followed by others just hatched, up to the same age. This will bring you probably up to the end of May, or not later than the middle of June, when the flower-borders with young plants, together with the several crops of Strawberries and other fruits coming on, will require their exclusion also. Of course, where they are indiscriminately allowed to roam from one year's end to the other, they would carry death and destruction before them; but, admitted as I have instanced them, I aver that they are of inestimable value.

I first introduced ducks in consequence of the immense number of slugs and grubs with which I was troubled. These they have completely and effectually exterminated. A duck of any age will hunt out slugs and worms during the winter months. As soon as ever, or even before, the breeding season commences, they will consume every insect having life to be found in a garden. I have seen them eat up greedily the largest worms, cloaks, slugs, wireworms, and, indeed, as I said before, everything living—nothing comes wrong. The young ones, when introduced, limit themselves to worms and slugs, of which they are remarkably fond; and it is very pleasing to watch a whole brood of ducklings ranging the garden about a foot apart in regular marching order, and wheeling round and back again as soon as they reach the extremity. And, again, it is very amusing to see an old duck in the winter months range up alongside the Box-edgings, poking her bill wherever there is a chance of a slug harbouring, and then running off to the Strawberry plants, each of which will be examined in the same minute manner.

I introduced them originally from necessity, being a great lover of my garden. Having benefited by such introduction, I have long since formed a liking for them also, and I cannot re-

frain from thus recording the very great store I set upon them, although I feel that to do them full justice would require a, much abler pen than mine.—W. P. M.

WORK FOR THE WEEK.

KITCHEN GARDEN.

CLEAR-OFF all the old stumps of Coleworts, Savoy, Brussels Sprouts, Broccoli, &c., if not wanted for sprouts. This year up to this time there is no lack of winter Greens, and young Cabbages are forward and good. *Artichokes*, *Globe*, prepare a fresh plantation if necessary, by deep trenching and highly manuring the soil. *Asparagus*, forking the beds should be proceeded with. Some soot and salt may be sprinkled on them and forked-in. They are excellent stimulants when used in small quantities. *Beans*, make another sowing. The Longpod is a prolific sort; but the Green Windsor has the best appearance when sent to table. Earth-up the early crops. *Capsicums*, pot-off the young plants as soon as fit, and place them in a hot-bed frame; they are very subject to the green fly, which should be kept under by all means. *Carrots*, sow. The Early Horn is a good sort both for early and late use, as it keeps equally well with the long sorts, and is much better adapted for many soils than any of the others. *Celery*, prick out the early sown in boxes or on a slight hotbed. When it has taken fresh root-hold give it air at every favourable opportunity. *Jerusalem Artichokes*, if not yet planted no time should be lost in putting them in. *Kidney Beans*, make a sowing in pots. *Lettuce*, some of the best plants that have been wintered in frames may now be put out, some under a south wall and others in a more open situation. *Onions*, sow the main crops. If large ones are required, plant the very small bulbs of last year, or the autumn-sown plants in very rich ground; or large Onions can be had by the following method. Well tread the ground, and lay 3 inches of very rotten dung upon it; on this sow the seed, and cover with a little fine earth. *Peas*, stick the early crops as soon as they are earthed-up. A few small hornbeam boughs with the leaves on may be stuck on each side of the row. This will protect them from frost and cold winds. *Pot Herbs*, see that fresh beds of Thyme, Mint, Sage, Winter Savory, and other herbs are made. They generally want renewing every year. *Potatoes*, plant a good breadth of Flukes or any other good sorts. Protect Ash-leaved Kidneys and other early varieties as soon as they appear above ground. Sawdust is as good as anything, and it can be raked off as soon as all danger of frost is over. *Radishes*, sow for successional crops. The Turnip-rooted sort may now be sown. *Savoy*, make a good sowing of the Dwarf Green, which is the best for general purposes.

FLOWER GARDEN.

Complete any planting which circumstances compel you to do, but otherwise do not choose this season. Remember there is no time like early autumn. Prune Roses, and, as a general rule, the more severely you prune strong-growing Roses, the less they are likely to flower. If not done previously, the beds should have a good dressing of rotten dung or liquid manure. The Rose is a gross feeder. Complete the pruning and training of Clematises, Jasmines, Bignonias, and other creepers on trellises. Where you have gaps in Box-edgings insert pieces of Box to mend them. These may be clipped in April. Complete the boxing of beds and walks immediately; let the Box be trimmed neatly. Sweep and roll the lawns well, taking care that they are closely cut down now, thus laying a good foundation for the season. Nothing adds more to the beauty of a place than fine smooth turf; and where there is sufficient labour, it is a great improvement to extirpate Daisies, whose flowers mar the effect of a lawn very much. Retouch the grass edgings of the walks with all care and precision, and turn old or add new gravel where necessary, so that when your garden reaches the height of its beauty, all its parts may be in the most perfect order. Look over the beds planted with bulbs, and where necessary stir the surface soil so as to keep it open and friable, and also to give it a clean, neat, fresh appearance.

FRUIT GARDEN.

Finish the nailing of all wall trees. Tie down the branches before the buds swell too far, of the Pear trees trained *en quenouille*. Protect blossoms with canvas, bunting, fir boughs, or fronds of Ferns. The covers may be taken off occasionally on sunny days, and put on at night when frost is expected.

STOVE.

Push *Clerodendrons*, *Stephanotis*, and *Allamandas* forward as briskly as possible, but do not be in a hurry to train them. Pot-off the *Achimenes*, and any seedling plants which are sufficiently large, and start a fresh lot of *Achimenes*, *Gloxinias*, &c., to form the second succession. Stimulate the young growing plants as much as possible—that is, consistently with the state of the weather; and while you give plenty of air, at all times guard against sudden changes and cold winds. All Orchids that have commenced growing and require potting, should be attended to forthwith. This is a good time to shake out and repot *Cyrtopodiums* and *Sobralias*; they thrive best in good-sized pots, well drained, in a compost of equal parts of good turfy peat, loam, leaf mould, crocks and charcoal broken rather small mixed well together, and when the plants are growing freely, they must be well supplied with water. Pot in the same compost, omitting the loam, the following genera—*Houlletia*, *Acanthophippium*, *Mormodes*, *Lycaste*, *Cycnoches*, *Catasetum*, and *Huntleya*. This is also the best time for parting and shifting *Gongoras*, *Brassias*, and *Acroperas*, they succeed well either in baskets or pots, and should be potted rather high in sphagnum moss with a few large lumps of charcoal built in amongst it in the process of potting, and all made fast with a few rough deal pegs.

GREENHOUSE AND CONSERVATORY.

Where a large quantity of hardy shrubs is annually forced, either to decorate the drawing-room or conservatory, it is not desirable to pot a fresh stock each season, as a number of deciduous shrubs—such as *Roses*, *Lilacs*, *Honeysuckles*, &c., may, by proper treatment, be made to bloom for several successive seasons. Select, therefore, the most suitable plants when removed from the houses, and give them some kind of temporary shelter to gradually harden their foliage. Those cramped for pot-room, shift into a size larger, pot in rich turfy loam, and towards the middle of next month plunge them in an open situation in order that the wood may be ripe early. These plants from having been previously forced will bloom earlier than the new stock, of which a portion each year should be potted to replace such plants as become useless for further work. Now is a good time to commence with a stock of *Begonias* for next season's display. As they go out of bloom allow them a short rest in a rather dry house, when they may be partially disrooted, pruning-in any straggling shoots. Keep them close and syringe frequently, when they will soon commence growing. Abundance of light and a tolerable share of pot-room are necessary to insure fine plants.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

PUT-IN the bulk of the Potatoes on dry days, using the ridged-up ground for the purpose, planting the Potatoes in the hollows, and trundling-in the nice mellow soil of the ridges over them, after they had been covered slightly with material from the burnt earth and charring-heap. Placed some of the most forward sprung ones on a north border, covered them with leaf mould and then with litter; to be lifted again when we can find room, and to be placed over a mild heat from tree leaves, as we fear we have not enough of forward ones, and cannot spare a bit of glass or cloth for a fortnight. Those tubers planted in pots are now yielding a nice supply for the table.

Prepared ground for Onions, Leeks, &c., and for sowing spring vegetable seeds. Would like to have the ground mellow and warmer before sowing. In light soils this will be of less importance, and sowing may be proceeded with. Hoed over Asparagus and Sea-kale beds, so as to kill any weeds that might be coming, before giving a dressing of salt. Threw rough ashes, sawdust, and barley awns over Peas and Beans coming up. Will move the Peas shortly to the orchard-house. A row of Tom Thumb in front of one house is looking very strong and sturdy; but this Pea, though early, has little except its dwarfness and earliness to recommend it. How one of our esteemed coadjutors could sigh after the miserable small Peas that come in first, as the Sangster's and the Frames, and wish for their tasteless produce all the summer through, we cannot imagine; but, of course, he ought to please himself, and can easily do so by sowing only those small kinds often enough in succession. We think we mentioned long ago that we once were brought to book for sending old Peas to table—considered old because no one had the courage to taste them owing to their size, the Peas being fine specimens of Jeyes' Wonderful, as soft

as butter in the dog-days, but larger than Charltons when full grown, and then requiring some masticatory powers to fit them for digestion. In most small places an error is made of sowing too thickly. If the Peas were a couple of inches apart the crop would generally be more abundant; but the mice and the birds are so apt to help themselves, that in self-defence we often sow thicker, but with no great advantage. A magnificent row of Parsley in an orchard-house we must get rid of, as it is not wanted this season. Such a crop would have been worth much in 1861, and most likely we will try the same plan again. The seeds were sown at the end of June close to a row of Dwarf Kidney Beans, then bearing. By the time the Parsley was any size the Beans were removed. Parsley out of doors has needed no protection this season. Some of this Parsley will be stuck in thickly in a border for roots, as those of the common kind answer for stewing, &c., nearly as well as the Hamburg. Those who save their own seed should now mark-out some of the finest plants having compact curled leaves.

FRUIT GARDEN.

Netted some dwarf Plum trees that were a mass of fruit-buds. These trees had been well syringed with the mixture of water, soot, lime, and crowding, and the birds had let them alone until they had it all to themselves during the stillness of last Sabbath morning, then they pretty well stripped several of the trees; and it was not what they ate of the buds, so much as the numbers they nipped-off and threw down in sheer wantonness, that was the most vexing part of the affair. We know that many of the extra advocates of the little birds are so steeped in philosophic wisdom and endurance, that hardly anything conceivable could ruffle their mild well-governed spirits; and yet we think that such sights would be apt to move their choler a little, and that even they, if their favourite fruit trees were near to well-kept preserves, would acknowledge that it was possible to have too much of a good thing.

Finished pruning and nailing Peaches and Apricots out of doors. Find in the latter still traces of the frost of 1860 and 1861, in shoots and branches dying-out in places, and some kinds are not so well covered with bloom-buds as we should have expected. Watered the borders in orchard-houses, and set out and fresh-dressed the surface of trees in pots. Our house is a lean-to, with a walk near the back. We want a trellis of wood or iron for this, but have not obtained it as yet; but it looms in the future. The walk being formed of a sprinkling of gravel and sand on the surface, with an edging of brick on edge, looks well enough, but it becomes so hard and firm-set, that no water will penetrate; and when we break it up to give a good soaking, no person careful about his shoes can walk on it for some time afterwards. We incline to think that a cast-iron trellis in pieces some 9 feet long, and 15 or 18 inches wide, would be the best thing for such a purpose, where neatness and ultimate economy are considered. Our sand-and-gravel path would be the cheapest at first, but if not attended to, the soil beneath is apt to become too dry. In the meantime, having given the space thus covered a good soaking with manure water, doing it by degrees, we shall prevent the necessity of breaking-up the path often, by frequent, daily sprinklings on the surface of this pathway part, and that will so far prevent free evaporation from the hard surface. A trellis would allow of air and moisture penetrating freely.

The trees which are not yet all regulated, and which must now remain so until they are set, are as thick of bloom as they can bear. Had we time we would thin freely, for if a fruit is allowed to remain for thirty or forty blooms, it will be pretty well enough. Some people like small Peaches for tartlets, and a few may remain for that purpose before the final thinning. We do not know why, but we never knew Nectarines when young used for that purpose; but many people like Peaches as well as green Apricots. Young Grapes are also very nice, when not larger than small lead shot. When the young berries are as large, or larger than frame Peas, you would require to be on good terms with a grocer to render them palatable. When very young they are free from such extreme acidity.

Smoked the Peach-houses again for the brown beetle, which came to us last year as no common visitation, and how we cannot say. We went to bed on Saturday night, glad to think that, having been over all the trees and found none, we had succeeded in driving the ugly customer away. We took the opportunity of watering the borders of the house pretty well with chilled water, and then, having well syringed the trees before shutting the house up, we congratulated ourselves that this torment was

disposed of for a time at least. On Monday forenoon some of the lower shoots of the Peaches were as black with the enemy as if you had dusted them with charcoal dust. No doubt they had been enjoying themselves among the dry nodules of soil, had sallied out to escape the watering, and, finding the foliage sweet and fresh after our extra syringing, had resolved on having some of the best that was going. There is little difficulty in killing them by smoking, by washing with Gishurst, or other things, as a slight touch will kill; but if the touch be slight it will only set free prematurely a batch of young ones, or if one beetle escape you will soon have hundreds. If you take a good fat full-grown one—say as big as a good-sized turnip seed, and give it a squeeze with the point of your nail, or the point of a small stick, you will cause to emerge a string of young ones more or less fully formed, looking under a microscope like a rope of Onions. The myriads thus quickly produced by one insect are incalculable. On the wall-plate of a pit in a sunny day we found some running about, but have seen none since the frost. Whenever one is seen it ought, therefore, to be hunted-up; and when none are suspected, the trees, when the fruit is set, should be syringed over now and then with clear Gishurst water, clear laurel water, and clear soot and sulphur water, so that the leaves may not present such a tempting bait for them. A little of these precautions will often keep them off altogether. We found last year a beetle very similar covering entirely some plants of Horseradish; but they did not seem to care for other plants or leaves placed beside them. This one that has troubled us a little with the Peaches is very quiet and lazy during the day, but he can run about fast enough at night. If allowed their way they will soon suck all the virtue out of a shoot. If not eradicated or destroyed in summer, our experience would give us little hopes of getting rid of them by any means in winter: we question if even a severe frost would kill them—they would find means for sheltering themselves.

Proceeded with other houses much as detailed in the last and previous weeks, attending to setting Grapes, training Cucumbers, potting Melons, regulating and changing Strawberries, which are showing their gratitude for the fine sunny days.

ORNAMENTAL DEPARTMENT.

Out of doors the work much the same as in previous week. Shifting plants, and being smothered-up for want of space, we have turned out into earth-beds some thousands of bedding plants, beginning with Salvias and Calceolarias, and will follow with Geraniums and Verbenas. These, according to the size of the plants, will have an average space of 3 or 4 inches, so that they may turn out nice bushy plants in May. They will be protected from cold weather chiefly at night by whatever can be most conveniently obtained. Nothing is better than a roll of calico fixed to poles. Proceeded with making cuttings of bedding plants as room could be found for them, pricking-off Lobelias, and sowing flower-seeds in pots in heat, deferring others a little longer, &c.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

PACKING PLANTS FOR NEW ZEALAND (A Lady).—From May to July is the best planting time there; so not a day should be lost in despatching them. Moss or damp cocoa-nut fibre dust packed closely round deciduous trees, and in a common wooden box fastened round with iron hoops would preserve them as well as any other mode. We cannot say where you can buy Hepatica or Clematis azurea grandiflora seed.

GOURDS (F. S.).—Such Gourds as Big Ben of Westminster, Dr. Lindley, Goblet, &c., grow large; but for the front of a house we would prefer a heavy crop of a less size. About removing your Vine, see another part of our columns.

WORMS IN THE SOIL OF A LAWN (R. C.).—No mode of banishing them is more effectual than watering the lawn once a-week with lime-water.

COKE AS FUEL.—CONSUMING SMOKE (J. Mackenzie).—We think good coke is cheaper than coal; but yours ought to be good at the money. The most obvious means of lessening the smoke, if coal is used, is to introduce a small pipe, say from half to three-quarters inch wide, communicating with the external air, just in front of the fireplace, which will throw the smoke back on the fire again. A small hole in the furnace door near the bottom is also useful. A simple mode is to keep the live coal at the neck of the furnace and the fresh nearest the furnace door, and shove it along as it burns. The smoke will thus be burned as it passes over the live fuel, and what is behind will be gradually coked. We have several times found that in boiler furnaces a plate inserted below the damper for sweeping the flue, with a hole of a quarter of an inch in its centre, did much to lessen the smoke, especially when the damper was partially in.

PROPOSED FLOWER PLANTING (Godetia).—As you want the plants in your beds to bloom at the same time, to be of the same height, and to present an equal mass of bloom with *Nemophila insignis*, then we would so far alter your proposed planting as thus, beginning with *Roses* at summer-house:—*Mignonette*; *Nemophila*, blue; *Eschscholtzia tenuifolia*, light yellow; *Saponaria calabrica*, bright rosy pink; *Sweet Alyssum*, or *White Nemophila*; *Nolana paradoxa violacea*, or prostrata, blue; *Mignonette*. The *Convolvulus minor* would be too rampant, and in damp seasons too green, and in the afternoons too dull. The narrow beds will look as well without divisions, the plants being allowed to touch each other. A nice ribbon in lines might also be formed of such a border. 20 by 7 feet, and then the border might slope, from having the tallest lines at the back. The *Godetias* of which you are so fond will do very well for the crosses. On one side we would sow or use *roseo-alba*, and on the other side *rubi-cunda* or *Lindleyana*. All these will bloom long if you pick off the flower-seeds and water in dry weather.

PRUNING ORANGE TREES (E.).—Very seldom, indeed, do Orange or Lemon trees require any pruning, unless they become diseased, when they may be cut back to a limited extent; or, if trained against a wall, they will occasionally want a fore shoot taken away. But when grown as bushes or trees they seldom need the knife, unless they encroach on the pathway, against the glass, or in some way or other usurp more than their allotted space, when they may be cut back by taking out some of the most offending branches, avoiding by all means giving a clipped appearance. About three weeks or a month before the season's growth commences is the best time to cut them, when they speedily recover and conceal the mutilation.

PEACH TREES IN A HOUSE WITHOUT FIRE HEAT (D. P. B.).—Your trees which are in flower will only require plenty of air until the bloom sets, when they may be syringed; and as it is not unlikely that green fly may make its appearance, a gentle fumigating once or twice with tobacco will be required about the time the fruit is setting. Disbudding may commence, but this must not be all done at once, but by degrees. The amount of water given must be regulated by the dryness or otherwise of the site. Generally speaking, deluges of cold spring water are bad; and as you say your trees are planted against the front of the house, it is likely a great part of their roots run outwards, and consequently those inside will require less water. We should hardly think your house in the north of Northumberland would be altogether safe without fire heat from some of the severe frosts now and then occurring in some seasons; but you may guard against this by covering the glass with mats, or something of that kind. After the fruit is set you may syringe the trees every morning, using rain water for the purpose.

DISA FROM THE CAPE (Frank).—The species named by you—viz., *Disa grandiflora*, *barbata*, *purpurea*, *rubra*, *culcullata*, and *fragrans*, are not all known to us—in fact, so much uncertainty of late years has arisen in the nomenclature of Orchids of this class, that it is probable some of the species you have received may exist under another name. Your best way is first to treat them as greenhouse bulbs, and after they begin to grow to increase the heat to that of the stove. If they be in masses of several bulbs together that will easily part, separate them at once, but do not tear off a half-formed offset until it be sufficiently advanced to part easily from the parent root. We shall be glad to hear how you succeed with them. Cape bulbs, once very popular, have been neglected for many years, but are again taking their proper place in public opinion.

CUTTING-IN EVERGREENS (A Subscriber).—March and April are the best months for pruning them, as the shrubs speedily afterwards make new growth, and recover the unsightly mutilation. They may be cut-in at any time during the winter; but for the reasons above given, we have always preferred delaying it until a short time before they started to grow. It is not advisable to cut all the foliage away; leave a branch or two on for a time, even if they be cut off hereafter, as they encourage the growth of the new shoots.

GREASY LIQUOR (T. H., Reigate).—Apply it to any part of the soil where Cabbageworms are to be grown.

TEMPORARY EDGING PLANTS FOR A KITCHEN GARDEN (G. Graham).—Beet, as you propose, will do; but we should prefer Parsley, or say a part of both with a little Thyme also if wanted. Having 500 yards altogether, we should say it would be better not to have it all of one kind. One ounce of Beet seed will sow 100 yards; but as the seed is not expensive, it is better to sow more than that quantity of seed on the space. Beet bears transplanting very well, and it is advisable at all times to sow a little on some favoured spot to fill up gaps in the general plantation.

KOHL RABI AND MANGOLD (Idem).—About 4 or 5 lbs. of seed of the first per acre is a fair allowance; the other is a large seed and may take double that quantity; but, in seeds that are inexpensive, and when the quantity of ground is small, it is better not to pinch seed. Sow a little of both in some favoured corner at the same time as you sow your main crop, so as to have plants to fill up gaps, &c.

ROSE TREES AND BONE MANURE (Subscriber).—If the worms which are attracted by the bones seize also upon the roots of your newly-planted Rose trees, then by all means take these up and replant them in fresh soil without the bones, allowing the latter to lie exposed to the air if possible to kill the vermin. If, however, the worms only attack the bones, no particular harm is done; and if other conditions are favourable the Rose trees will come all right. If, however, the bark of the roots is eaten away, no time must be lost in removing them, washing their roots well in lime water to efface all traces of the pest before planting them in their future situation. We are not sure what you mean by the term "worms."

JAMAICA FERNS (P. B.).—If you procured some botanist to name the specimens, your best plan then would be to advertise the collection for sale.

HEATH CUTTINGS—HEATHS IN SUMMER (Tyro).—Heath cuttings must be regularly watered as they need it: soaking them well will kill them. The glasses must be kept on until roots are formed, and then be taken off by degrees, leaving them off at night first, then morning and evening in addition, and then removing them altogether. Heath bloomed in winter, if at all free-growing, should be pruned pretty well back, kept close until fresh growth is proceeding freely, then more air given, and be fully exposed in autumn to the sun and air, and be housed in October.

APRICOT IN A GREENHOUSE (T. Wood).—If you keep your greenhouse warm in winter, or if you have a stage so as to shade the back wall, your Apricot tree will do no good as to fruiting. If you merely keep frost out in winter, have no stage which would shade the back wall, and give plenty of air in spring—then the tree will do well. From your description, however, we suspect the tree wants root-pruning. If you gave as much heat to your greenhouse as from 40° to 45° in winter, and kept it rather close in the spring, a Peach or Vine would do better than an Apricot. We would not despair of the Pear trees for next season, if you follow the same system, though we are almost afraid you have missed some of the main tap roots.

ORCHIDS (Orchidophilus).—For a bulb of *Calanthe vestita* from 2 to 3 inches would be a good size. It is somewhat difficult to renovate a neglected collection. They will require more shade, and more moisture in the atmosphere than healthy specimens; and as soon as they are moving strength may be communicated by manure-waterings of a cool nature, such as that from old cowdung, and nodules of old cowdung that has been well dried may form part of the compost. A little manure, if carefully applied, does the plants no harm, except the very tenderness of those fixed to blocks, and even these we have seen dipped in weak solutions of manure with advantage. The words "at least 3 feet high," at page 598 of the *Cottage Gardener's Dictionary* should be struck out.

FOUR BEDDING-OUT GERANIUMS (W. C. H. N. D.).—If we were confined to four kinds, we would have Christine (pink-flowered), Tom Thumb or Crystal Palace (scarlet), Bijou as a white-edged, and either Cloth of Gold or Golden Circle as a yellow-edged one. Two more kinds would do for the largest garden—that is, Mangles' Variegated or Shottesham Pet, and a deep rose-coloured one as Rubrum or Paul d'Abbe.

PINK VERBENA AND EDINGE FOR VERBENA (Idem).—As a rosy pink, Great Eastern is very good, while Ida is a delicate pink. Some of the shaded or fancy sorts make a very good pink, by the blending of the two colours composing each flower. One of the best that way is Herman Steiger, an old kind. Amongst new ones, Cheerful is a good pink; but there are so many tints having the name pink that it is difficult for one person to choose for another. As an edging for a bed on grass, the old Variegated Alyssum keeps pace with the growth of the Verbena best; and excepting for a light-coloured variety, it looks as well as anything; but if the flower be white try Perilla, or Lobelia speciosa.

FRAME HEATED BY A FLUE (J. E.).—It is most likely there has been an escape of smoke from your flue, but the same evil would arise from too much heat; by neglecting to give air sufficiently early on a bright sunny day, the small volume of air in a frame quickly becomes overheated, and bad results follow. If, however, your Cucumber plants be likely to recover, it is certainly not advisable to disturb the flue and all the contents of the frame if it can be avoided. First, therefore, ascertain, if you can, where the escape of smoke is, and if there be a drain-pipe at that place stop it up. We presume your drain-pipes are placed upon the flue and not exactly communicating with the chamber. If the latter, however, be the case, the temporary remedy is more difficult; but as the season is fast advancing when atmospheric heat will be less wanted, you might partly stop the pipes up with moss that had previously been scalded, to kill all insect life in it. A little moss put in each pipe and frequently wetted will filter the heat of some of its impurities and charge it with moisture suitable to the wants of the plants inside, Cucumbers especially delighting in a nice, agreeable, humid atmosphere. It is generally easy to detect any pernicious vapours in a pit or house by inhaling the air after previously being some time in the open air. Most gardeners know by the test of their lungs when the heat is a nice and sweet one, free alike from the rankness of unprepared dung or the smell of an Ayrton stove which fire-heated surfaces often give off. If, however, your flue be too bad to go on for the present crop, by all means have it rectified, and we have no doubt but it will act. At the same time try and bring the first light into use if you are restricted for space laterally for your fireplace. Then go deeper, so as to have the extra room above for the hot-air chamber and other overheating precautions. If your frame be a close-fitting one, it would be better to have a small opening at the back at all times. Many impurities would pass off that way that might be hurtful to the plants inside; and as you reside where coals are cheap, the little extra expense in fuel is of little moment.

NAMES OF APPLES (W. Hilder).—1, Russet Nonpareil; 2, Colonel Vaughan's; 3, Not known; 4, Court of Wick; 5, Not known.

NAMES OF PLANTS (W. C. C.).—A smooth-leaved Laureline, probably a weak shoot of the var. lucida; Erica carnea. (John Gray).—1, Notholaena distans; 2, Asplenium trichomanes; 3, Blechnum spicant; 4 and 6, Lastrea Sieboldii; 5, Woodwardia (Doodia) caudata.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE POULTRY CLUB.

UNDER the authority of this newly-formed Society a circular has just been issued. It embraces not only the proposed future operations of the collected body of its members, but also explicitly points out the evil it is intended to eradicate. In the first place it proceeds to avow the formation of the Society has arisen from "the very different awards of the judges, and the diametrically opposite opinions of arbitrators on certain points, as exemplified at our different public poultry exhibitions."

True it is that such variances of opinions have "led to the confusion" complained of; but the primary question is this: From what particular causes do these complaints arise? Decidedly the most important of our shows leave but little room for amendment in the matter of the arbitrations; but on the

contrary, not a few of our minor meetings have justly called forth considerable animadversions from the irregularity of the awards, and the perplexities thus caused to breeders.

A case in point occurring not long since is an apt illustration of the majority of instances of such misunderstandings. A show that had for many years past held its annual meetings with unvarying and increasing success, repeatedly added small sums to its surplus incomes, and promised a great increase both of size and popularity as time progressed. Unfortunately for the welfare of the Society, a new resident in the locality, himself a poultry-fancier, and then a subscriber of £5 to its revenues, proposed an alteration in respect to the previous arrangements for adjudications, which he assured the committee would prove most advantageous on the balance sheets, saving an outlay of about the amount of his subscription that had been hitherto expended in judges' fees, and an arrangement which he was convinced would also meet with universal approval when the awards were made known. The experiment was tried; as the gentleman, on whose behalf the application in committee was made, assured, that body by letter, that "he had been an enthusiastic breeder of almost every variety of poultry for more than twenty-five years, and that he had not the slightest fear as to his competency to fulfil the duties to the satisfaction of all." Again, he stated, "as it was his greatest ambition to become a poultry judge, he would not object to give two guineas to the Society, besides paying all his own expenses, if his offer were excepted." He came to duty, bearing with him not only a well-known publication for instant reference should difficulty arise, but also a manuscript of his own, written expressly for this occasion. The result was, that though the Show was advertised to open as heretofore at midday, the arbitrator now appointed had not quite completed his awards at 7 P.M. In a private letter one of the Committee since writes: "Our show is for ever ruined. The instances in which the awards were obvious enough to any poultry-lover, were got through efficiently and speedily; but in almost every case, in which competition arose, a delay of very considerable duration immediately ensued for the purpose of reference, and thus eventually the premiums then under consideration were given quite as frequently to the worst as to the better pens." The Judge declared his difficulty arose from the application of his rules to the birds before him. "In his hurry to 'skedaddle,' he left his books behind him, which (both the printed and manuscript) were unquestionably good. It would have paid our purpose better," says the Committeeman, "to have given Mr. — fifty or a hundred pounds to have stopped away."

The fact is, it wants the greatest practical experience in a poultry judge to select at once by the eye, and nicely to balance the proportionate excellence of rival pens in the short space of time allotted to the duty. It is a natural gift to a great extent; for which book-learning will never prove a fitting substitute.

It is certain, too, that our principal shows will never succumb to the dictations of the "Poultry Club," involving as it will most probably, contending personal interests; neither will the managing committee of our lesser exhibitions fail to hesitate before placing the well-doing of their particular meetings in the hands of comparative strangers. A local committee of any show must of necessity prove the most effective in its own management. Again, it is probable that none of our most reputed judges of poultry will accept office encompassed with leading-strings, or aid in furnishing the code of rules on which, by their printed admission, the successful hopes of this embryo Society depend. In our opinion, it is evident that the proposed Club is an abortion without life or power, and although formed to suppress all causes for future grumblings, yet itself it would become, if allowed to act, the nursery of dissatisfaction.

Lastly, the assumption of power by such stewards, "as happen to be present" at any local meeting where the rules of the Club are in force, will subject themselves to no very pleasing amount of personal reflections by the attempt, when called upon, as provided "to deal with the case as they think proper," in cases, too, where even they may themselves be interested competitors. Without vastly improved rules and regulations to those now issued, failure is inevitable.

REAL SPRING CHICKENS.

SAYS Mary Powell, "The sojourn of the Court at Oxford, and the number of troops and officers on duty, do cause great demand for the spring chickens and ducklings in the yard."

Spring chickens did not always bear that name. They were once called—they are now in some places—"Asparagus chickens:" the two came together. They were called, also, "Paper chickens:" little white fat things used to come in small baskets, and each was carefully wrapped in soft paper. In France they are called the *poulets à la Reine*.

"What's in a name?" Asparagus, paper, spring, or *à la Reine*—few things are so delicious. People have no idea of the extent of the trade carried on by a small portion of Sussex, nor of the amount of money turned. At this time of the year the little delicacies make from 4s. to 5s. each. They seem to be among fowls like dwarfs among human beings—age brings no increase of size. The old form gets dry and wrinkled, but it is no larger.

It sometimes happens, at the end of a season, that the hen is killed with her progeny, and they all come up together. An unpractised eye would see little difference. They cannot be produced or made anywhere but in some parts of Sussex; and although they are the most perfect specimens of choice poultry that can be conceived, they have no outward indications of purity of breed, nor have they any distinctive marks or points. They are hatched perfect in shape, and in their onward progress they never arrive at an awkward age; nor are they ever all legs and wings, or ostrich-like, as many chickens are. Their merits as table poultry are of the first order; they are small-boned, very compact, full of meat. A paper-knife would carve one well. A joint left on a plate for a time will be found, when cold, to be bedded in its own jelly. He who has not tasted one of these, carefully boiled, and eaten with a little lemon juice and salt, has yet something to try.

We are speaking of the perfect. We shall appear paradoxical when we say no young fowl will make one of these chickens: one of these chickens will never make a fowl. Many thousands of pounds are returned for these every year from Leadenhall Market; and Sussex families have lived for many years, from father to son, by breeding and fattening these chickens.

HOW THEY OBTAIN CHICKENS GRATIS IN AMERICA.

ONE of our peculiar, slab-sided, gaunt Yankees lately emigrated and settled down in the West. He was the very picture of a mean man, but as he put himself to work in good earnest to get his house to rights, the neighbours willingly lent him a hand. After he had everything fixed to his notion, a thought struck him that he had no chickens, and he was powerfully fond of sucking raw eggs. He was too honest to steal them, and too mean to buy them. At last a thought struck him—he could borrow. He went to a neighbour and thus accosted him:—

"Wal, I reckon you hain't got an old hen nor nothin' you'd lend me for a few weeks, have you, neighbour?"

"I will lend you one with pleasure," replied the gentleman, picking out the very finest in the coop, one that happened to desire to sit.

The Yankee took the hen home, and then went to another neighbour and borrowed a dozen eggs. He then sat the hen, and in due course of time she hatched out a dozen chickens.

The Yankee was again puzzled; he could return the hen, but how was he to return the eggs? Another idea—and who ever saw a live Yankee without one?—he would keep the hen until she had laid a dozen eggs.

This he did, and then returned the hen and eggs to their respective owners, remarking as he did so:—

"Wal, I reckon I've got as fine a dozen of chickens as ever you laid your eyes on, and they didn't cost me a cent nuther."—(*Prairie Farmer*.)

SAFE ARRIVAL OF LIGURIAN BEES IN AUSTRALIA.

It will be perceived by the following paragraph, copied from the "Yeoman" of December 20th, that the four stocks of Ligurian bees, whose departure for the antipodes by the "Alhambra," on the 26th September last, was duly announced in THE JOURNAL OF HORTICULTURE of the 30th of that month, have reached their destination in safety. We certainly entertained hopes that one or two out of the four stocks would survive the voyage; but that not one should have failed surpasses our most sanguine expectations, and speaks volumes for the skill displayed by "A DEVONSHIRE BEE-KEEPER" in providing for the wants of the little travellers during their voyage. The result cannot

fail to be highly gratifying to him, as well as to Mr. Edward Wilson, to whose public spirit, we believe, the colony is indebted for this interesting importation, and to Messrs. Neighbour and Son, through whom the order was given, and who superintended the transmission of the hives from Exeter to Southampton, their place of embarkation.

At a meeting of the Acclimatisation Society at Melbourne, a report was laid upon the table from the Apiarian Society, upon the state of the four hives of Ligurian bees lately arrived. It was to the effect, that, although a very large proportion of the bees had perished from the confinement, yet, in consequence of all the four queens being alive, the Society confidently anticipate that these will form the nucleus of an important addition to the bee-stock of the colony. The report stated that, in consequence of the small number of Ligurians left in each hive, it had been found necessary to strengthen the hives by placing with them some of the common bees to provide the necessary food, and also for the sake of warmth; but this proceeding will in no way impair the ultimate purity of the new swarms of bees issuing from these hives.

BEE-KEEPING AT BATH.

In the frontispiece of Jardine's Natural History, vol. vi., "Bees," 1840, is a very pretty drawing of a honey bee on a heathbell. The moral and the execution were so good, that I had it cut on my signet ring, and it has afforded me many a lesson. It was as a word in season. Since then I have wished to become a bee-keeper, but never carried my desire into effect till the spring of 1862, when, stimulated by the discussions as to the respective merits of the common and of the Ligurian bees, I purchased the "Bee-Keeper's Manual," by Henry Taylor. Thinking it desirable to obtain some experience in management before incurring the expense of £5 5s. for a swarm of Ligurians in Mr. Woodbury's hive, I had a bar-hive made in accordance with Taylor's directions, page 56. To be able to compare this with the Woodbury bar-hive, Messrs. Neighbour supplied me with one ready for use. My limited experience has shown me the advantage of this latter shape. The interval between the bars and the top-board permits the bees free access to all parts of the hive, and to ascend by several ways to the super. Moreover, the shape of the Woodbury-bars does not allow the bees so readily to form their combs in any but parallel lines. I have found that though a point of the combs in the flat-bar hive may be attached square with the side, other combs are built in different directions, just as the fancy of the first formation arose: consequently it would not be possible to remove any one bar without destroying much comb. On the other hand, the shape of the Woodbury-bar is so defined, that though the comb may not be made in a strictly straight line, a bar might be removed without much disturbance of the neighbouring comb. There can, however, be no doubt that the bees do not like to form a perfectly straight comb, however accurately a piece of guide-comb has been fixed on one or more bars.

My hive being ready, and the house for two hives ordered, late in the evening of April 26th a large swarm, called hereafter No. 1, was safely housed, unfortunately, in the novelty of the scene and operation, in the super (of Taylor's) hive. On May 3rd, another, No. 2, was properly hived in the Woodbury-hive. My garden being quite a third of a mile away, my pets cannot be watched, especially by one who from many occupations cannot see them after breakfast; nevertheless, as they have the range of very extensive public gardens, abounding in all the growing trees and shrubs that are known to be fit for this climate, besides suburban gardens well stocked with apple, pear, and other fruit trees, as well as miles of pasture land, they thrive very well, and return laden with pollen, which, from the abundant bloom of the red chestnut and red hawthorn, is more often red than yellow or white, as is usually the case.

After a while, hive No. 2 became filled with comb, and the bees began to cluster on the alighting-board, when the super was added. This was quite filled with comb in the course of the summer. No. 1 never did so well—no clustering, no need to add the super. In the autumn I removed the super and found a small quantity of liquid honey, which never solidified. I gave each hive barley-sugar. The same difference of vigour characterised my two hives. No. 1 would take none, while No. 2 fed freely. In the middle of November the troughs were taken away, the closing-blocks put in their places.

The last week of January I removed the hives from their boards, which I scraped and cleaned, as the crocus was showing bloom, and I thought they might be stirring out to see the world once more. All were then alive, but No. 1 was very light. I had ordered barleysugar to be in readiness, but, unfortunately, the cook had made it of brown sugar, and it was toffee, not barley-sugar, and I feared to give them this. This delay appeared to have been fatal, for within a week I noticed after a very fine day a large number of bees were dead in front of No. 1, and within it there was not one alive. It was a case of starvation, not a particle of anything edible was there to be found. Numbers had buried themselves in the cells in the faint attempt to find sustenance. The queen seemed to be perfect. The barleysugar came too late. The lesson I have thus early learnt is to feed my bees.

In the month of August, outside the hives I found many of the enclosed, which I presume to be larvae of the drones, as about this time the drones became less numerous, and far more languid in their movements; shortly afterwards they wholly disappeared. My bees are at present (March 4th) enjoying their feeding-trough, but do not eat so much as I had expected. When should the trough be removed? I judge from a letter in a recent Number, that the air which must necessarily pass through the hive to it tends to keep the hive cool, and so to delay the formation of brood. On lifting No. 2 I found several small white maggots beneath the edge of the box. Were these the maggots of the wax moth mentioned as one of the enemies of the hive?

Can I venture to give my bees the brown sugar cake, or must it be thrown away? I have a friend who for more than twenty years has had a Nutt's hive with the side boxes fixed in his wall with the door behind. These have thriven according to the season; but his gardener is so afraid of them, that except to move the zinc slips to give admittance to the sides, they are never touched or interfered with in any way, still they thrive; and they gave a large quantity of first-rate honey in 1861—a good illustration of the wise maxim to let well alone.—B. J. S.

[It is very possible that what you enclosed were drone larvae, but they had disappeared before your letter reached us. If closely covered, the feeding-trough will do little harm, although we decidedly prefer the bottle. We have given bees brown sugar in the form you describe, without any evil results, and, therefore, see no reason why you should not use up what you have on hand, although it might not be advisable to give it habitually. The white maggots found under the edge of the box were, doubtless, the larvae of the wax moth.]

FERTILE QUEENS—DISTANCE BEES FLY— HONEY SEASON.

The remarks of "A LANARKSHIRE BEE-KEEPER," in your excellent Journal of March 3rd, powerfully revive in my mind the two questions I ventured to put a few weeks ago. The first was, What is the best method of insuring a succession of fertile queens? The second, Are there any facts determining the distance of the flight of the bees in search of honey? I sincerely hope some of your correspondents will afford us a reply.

The remarks to which I particularly refer are these: "They might do very well in good honey weather; but as the honey season generally lasts only about two weeks here, they would, probably, lose a great many bees in ordinary weather." The fact stated in these words I think not sufficiently appreciated. "The honey season" I believe to be short everywhere; but will our friend kindly inform us which he considers to be about these two important weeks, and also what flowers bloom then from which the bees gather their harvest? How much must depend upon their proximity to the apiary? Probably the "season" may occur at different times in different localities, as the same flowers may not be within reach of the bees in different places.

I have often been surprised at the apparent contradiction even of my own observations, in their increase or decrease of weight at different periods, and my observations again differed from those of others; but as there never was an effect without a cause, one feels earnest in the desire to comprehend some of those causes which produce the mysteries as witnessed amongst "our favourites."

I know that the keen observing eyes of those I could name

among your correspondents, may see perfectly what appears so strange to us. If, therefore, they will favour us with the benefit of their knowledge we shall esteem ourselves happy.—EDWD. FAIRBROTHER, Woolwich.

P.S.—I might subscribe myself "A LONDON BEE-KEEPER," and not be far out.

[We shall be very glad if any of our able correspondents will reply to the questions asked by Mr. Fairbrother. We ourselves find it difficult to do so with any great degree of certainty. "Destroy first swarms and keep old stocks," is a very good maxim for the old-fashioned bee-keeper who wishes to secure young queens, but beyond this little can be said, unless we advise our correspondent to become a first-rate operator like "A DEVONSHIRE BEE-KEEPER" and others, in which case he will find the selection and renewal of queens easy enough. The time of honey harvest varies in different localities, and in different years. In some, such as 1860 and 1862, it never occurs at all. We know of no facts positively determining the distance traversed by bees in search of honey. Huish is so notoriously unreliable, that we do not think much of his authority. Without, therefore, any very decisive information to guide us, we venture an opinion with some diffidence, although it is founded on an experience of many years. We believe that the range to which the honey bee can profitably extend its flight is limited to a radius of a mile, or at the outside a mile and a half.]

BEE-KEEPING IN THE NORTH OF SCOTLAND.

AN old and formerly a very successful apiarian writes as follows:—"Absence from home and a careless gardener have reduced my once-numerous colonies to one stock; and another wet summer will certainly finish-off the very few remaining bees in the north. We depended chiefly on heather for main crops of honey, and I can only describe our weather for the last three years, by saying that my stocks sent to the heather about the 20th of July, that used to come back well filled, have uniformly returned lighter than they went; the incessant rain completely preventing all collecting of honey, and obliging my poor friends to use up the little they had made in summer. Formerly less rain used to fall in summer hereabouts than in any other part of Britain, and we had frost and snow in winter, which now are a matter of surprise."—M.

OUR LETTER BOX.

HENS WITH SWOLLEN EYES (*J. A. Bolton*).—Your fowls have incipient roup among them. Separate sickly from healthy birds. Give them castor oil and Bailey's pills. Feed on bread and ale, and let them have green meat. Wash their faces with cold water, vinegar, and camphor julep. It only adds to the suffering to tie up the legs and prevent a comfortable scratch.

MALAY FOWLS (*Rustic Robin*).—"Pheasant Malays" and "Malays" are as distinct as Hottentots and Caucasians. The Pheasant Malay is, properly speaking, an Indian Game fowl. It is essentially a bird of feather, quite distinct in every particular from the bird we described. Yours should be covered with feathers of a rich deep chocolate, spotted all over with spots of a glossy green black. They should have bright yellow legs, and be neither as high nor as large as the Malay.

CRÈVE CŒUR FOWLS NOT LAYING (*Lady Amateur*).—There are two things wrong in the treatment of your fowls. Either would account for partial failure, and together they may account for all your disappointment. The paved yard is very bad, and it mends it little to cover it with straw. Cover with loose gravel, mould, road sand and bricklayers' rubbish, or what you will, a few inches deep; it will keep sweet and afford a scratch, but straw will not. Next, you overfeed, and your fowls are too fat to lay. Give ground oats slaked with water night and morning. Feed on what you will at midday. Your expenses will be less, and your eggs tenfold.

LIGURIAN BEES (*B. G. S.*).—T. Woodbury, Esq., Mount Radford, Exeter, can supply you.

WORK ON BEES (*R. Legett*).—Mr. Payne's "Bee-keeping for the Many" can be had post free from our office if you enclose five postage stamps. Mr. Payne's hive is the most simple and effectual for managing bees cheaply on the depriving system. We know a party who supplies a hive and its super complete, money paid in advance.

CHOICE OF HIVES—LIGURIAN BEES (*C. E.*).—We are not acquainted with Knight's hives, nor, in fact, are we disposed to recommend any particular description of bee-hive. Why not pay a visit to Messrs. Neighbour and Sons, at 149, Regent Street, where you will find a large assortment of all kinds, from Payne's Improved cottage-hive at half-a-crown up to any price you please. For information respecting the Italians, write to T. Woodbury, Esq., Mount Radford, Exeter.

BERKSHIRE PIGS WANTED (*J. G.*).—You had better advertise in our columns, and you will have replies with more particulars than we can give you.

WEEKLY CALENDAR.

Day of Mnth	Day of Week.	MARCH 31—APRIL 6, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.		Sun Sets.		Moon Rises and Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	m.	h.	m.	h.	m.	h.			
31	Tu	Wood Sorrel flowers.	29.623—29.479	60—34	S.W.	.08	41	af 5	28	af 6	44	3	12	4	21
1	W	Water Fennel flowers.	29.844—29.769	58—48	S.W.	.02	38	5	31	6	5	4	13	4	2
2	Th	Early Orchis flowers.	29.639—29.497	57—56	S.W.	.24	36	5	32	6	24	4	14	3	44
3	F	GOOD FRIDAY.	29.786—29.576	63—35	S.W.	—	34	5	33	6	46	4	15	3	26
4	S	Spider Orchis.	30.041—29.980	60—38	S.W.	—	32	5	35	6	rises	—	16	3	8
5	SUN	EASTER SUNDAY. W. Gilpin died.	30.050—29.883	56—47	S.W.	.04	29	5	37	6	51	8	17	2	50
6	M	EASTER MONDAY.	29.944—29.865	56—46	S.W.	.12	27	5	38	6	7	10	18	2	33

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 55.7° and 38.3° respectively. The greatest heat, 78°, occurred on the 3rd, in 1848; and the lowest cold, 16°, on the 1st, in 1838. During the period 143 days were fine, and on 109 rain fell.

FERTILISATION OF ORCHIDS.



AD Mr. Anderson asked me two days ago for any facts illustrative of his case of unopened flowers of *Cattleya crispa* and *Dendrobium cretaceum* producing seed-capsules, I could have given no sort of information; nor can I now explain the fact. By an odd coincidence, yesterday I received a very interesting letter from Dr. Hermann Cruger, the Director of the Botanic Garden at Trinidad, who informs me that certain native species, and native species alone, of *Cattleya*, *Epidendrum*, and *Schomburgkia*, “are hardly ever known to open their flowers, but which nearly always set fruit.”

In answer to Dr. Cruger, I have asked him to look at the seed or send me some, and inform me whether it appears good.

Will Mr. Anderson have the kindness to send me a few seeds produced by his unopened flowers?

I further asked Dr. Cruger whether these Orchids in their native haunts *never* open their flowers. I can hardly believe that this can be the case, seeing how manifestly adapted the structure of their organs of fructification is to the action of insects. But it is known that several plants, such as Violets, Campanulas, Oxalis, &c., produce two kinds of flowers: one sort adapted for self-fertilisation, and the other sort for fertilisation by insect agency or other means. In some cases the two kinds of flowers differ very little in structure; and it occurs to me as possible that something of this kind may occur with Orchids.

Dr. Cruger further informs me that with certain Orchids, as in those which do not open their flowers, the pollen-masses after a time become pulpy; and though remaining still *in situ*, emit their pollen-tubes, which reach the stigma, and thus cause fertilisation.

An excellent observer, Mr. J. Scott, of the Royal Botanic Gardens of Edinburgh, will, I am sure, permit me to state that he has been making similar observations, and has seen the pollen-tubes emitted from the pollen-masses whilst still in their proper positions.

These facts were all unknown to me when I published my small work on the Fertilisation of Orchids; but I ought, perhaps, to have anticipated their occurrence, for I saw the pollen-tubes emitted from the pollen within the anthers in the Bird's-nest Orchid, and likewise in monstrous flowers of the Man Orchis. This latter fact seems related to Mr. Anderson's remark, that flowers of an imperfect character, wanting a petal or sepal, had a great tendency to produce seed-capsules.

These curious observations by Dr. Cruger, Mr. Anderson, and Mr. Scott, convince me that I have in my

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work underrated the power of tropical Orchids occasionally to produce seed without the aid of insects; but I am not shaken in my belief that their structure is mainly related to insect agency. With most British Orchids this conclusion may be looked on as established.

I will only add that since the publication of my work, a number of persons have set seed-capsules with various tropical Orchids.

CHARLES DARWIN, *Down, Bromley, Kent.*

HISTORY AND CULTURE OF THE CHRYSANTHEMUM.

MR. GLENNY wrote, about eighteen months since, a very interesting article on the introduction of the Chinese Chrysanthemum into England. He says it flowered for the first time in this country at Mr. Colville's Nursery, King's Road, Chelsea, in November, 1795, in which year the name Chrysanthemum (Golden Flower), was first given to it by Linnaeus, who distinguished two species, calling the one with a small flower, *indicum*; and the other with a large flower, *sinense*. But after his time a diversity of opinions arose among botanists as to the proper name, some of them saying the plant belonged to the *Anthemis grandiflora*, *Anthemis artemisiæfolia*, and *Anthemis stipulacea* (Camomiles). Modern English writers call it Chrysanthemum, with the exception of Sweet, who considers it a species of *Pyrethrum*, or *Feverfew*, and places it under the head of *Dendratheuma* (shrubby kinds). These differences of opinion arise from the small membranous scales resembling chaff found on the receptacle of the flowers of the Chinese Chrysanthemum at the base of the florets, such being characteristic of the genus *Anthemis*, while the receptacle of the true genus Chrysanthemum is without chaff-like scales. Nevertheless, they are in my opinion both the same genus.

In the “Horticultural Society's Transactions” of 1831, a history of the Chrysanthemum is given by Mr. Sabine, who says they were cultivated in the gardens of Holland, and described by the celebrated Breynius as far back as 1688. He calls it *Matricaria japonica*, and speaks of six varieties. They appear afterwards to have been lost, as no gardener in 1821 knew anything of them.

In January, 1826, Mr. Sabine, again referring to the Chrysanthemum, says, speaking of the rapid progress the flower had made in this country in a few years, that the shows of the flower at the Society's gardens in 1824 and 1825, had been acknowledged by its admirers to be, taking them as a mass, the most splendid and gorgeous exhibitions ever seen even in the gayest time of the year. The Show consisted of seven hundred pot plants. They began to bloom in October, and continued till December, with now and then changing a few of them for later-blooming ones, thus enlivening the garden at a period when there was nothing else to attract attention. Many of these varieties were collected by Mr. Parks in China and Bengal during 1821, and some of them were sent home by the Society's gardener, Mr. John Potts.

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The whole of the varieties in the garden at this period were forty-eight. These were introduced into the gardens of England at the following times—one came from China to France in 1789, and was brought to Kew from Paris in 1790; seven from Sir Abraham Hume, between 1798 and 1808; one from Mr. Evans, in 1802; one by Capt. Rawes, in 1816; one by Capt. Larkins, in 1817; one by Messrs. Brookes, in 1819; one by Mr. Reeves, in 1824; two from whom not known; four are English sports; and the remainder were sent from China by the Society's agents up to 1824. Mr. Colville, a nurseryman at Chelsea, sent to the Society a sport in 1822, of a pale Pink, grown from the Changeable Buff; coloured plates of several varieties of which were shown—viz., the Early Blush, Parke's Small Yellow, Blush Ranunculus, the Tasselled Yellow, the Changeable Buff, the Curled Blush, the Tasselled Lilac, and Two-coloured Red, the Pale Buff, the Windsor Small Yellow, the Clustered Yellow, the Clustered Pink, the Semi-double Orange, the Starry Purple, the Golden Lotus, the Brown Purple, the Two-coloured Incurved, the Late Quilled Yellow, Waratah, the Yellow Indian, the Double White Indian, the Small Yellow, the Quilled Pink, the Semi-double Pink, the Semi-double Quilled Orange, and the Pale Purple.

Mr. Munro, in a paper read before the Horticultural Society, in January, 1826, says—"Since the establishment of the Society in the year 1818, considerable attention has been paid to the culture of this plant, and the improvement is so great in its appearance that it rivals those grown in its native country." He then gives his mode of treatment, and I find his directions differ in a very trifling degree from what is generally practised now, both as regards compost and supplying liquid manures; and I have no doubt that in those days, had he possessed our present improved varieties, he would have grown them as fine. He speaks of a Mr. Joseph Wells as the best grower of that day, and recommends thinning the buds and watering with liquid manure as practised at the present day. On account of their delicacy, the idea of growing them in open borders was abandoned, except against south walls, while we have improved varieties sufficiently acclimatised to flower freely in the open borders.

The best mode of managing Chrysanthemums in the border I have found to be the following:—Remove the plants after cutting them down, and put them in close together in a sheltered part of the garden, covering them with a framework of thin laths to guard them from frost. When sufficiently grown—say 4 inches long, take off the suckers, and put them in small pots in light, sandy loam, on a south border, in rows, protecting them from the frost, and giving just enough water to keep them growing. If you can put them in cold frames so much the better. Then dig up the border 2 feet deep, mixing a little rotten dung with a good dressing of fibrous, turfy loam, and fork-in 8 or 9 inches deep. Let it lie rough for the winter to sweeten; plant out in the end of March, if the weather is favourable, giving to each plant a good handful of cocoa-nut fibre, which keeps the worms from it till it is well rooted. Plant the strongest suckers 2 feet apart, taking care the sparrows do not peck out the crown. Take off all side laterals as they throw out, till they show the second flower-bud. In July retain the three shoots thrown out from the crown, and take off all side shoots from the three branches as before till the flower-bud shows itself. Mulch the borders in August with cocoa-nut fibre, leaf mould, or rotten dung. Water with weak liquid manure from the 1st of August till they show their colours, and do not allow the plants to starve for want of plain water, as this throws them back, and when recovering they are apt to make a second growth, which prevents them blooming so early.

Cover them over the first week in October, to guard against frost, and if you have a frame and can put on glass they will bloom much finer and cleaner than with canvas. All buds not showing colour in October are of little use, as they seldom come to maturity in November, and it is generally so cold that the work must all be done in September and October, for border-blooming. If against south walls they will bloom much finer, as they are not so liable to the draughts as under canvas. If grown in eight-inch pots they must be treated in the same manner as in borders, except that they require a stronger liquid manure with good drainage; and if the water do not pass freely through, force through the mould a thin wire all over the pot, to open a drainage.

Now for a few words regarding the Pompon, or Chrysanthemum indicum flore pleno. About the year 1845, Mr. Fortune brought to the Society's gardens from Chusan a small semi-double, reddish, or light brown Chrysanthemum, which he called

the Chusan Daisy, on account of finding it at Chusan. The Society propagated it, and distributed it among its members. Thence it was carried to France, and came into the hands of M. Lebois, of Paris, an ardent lover of the Chrysanthemum. He seeded it, the climate being better adapted for ripening the seed than that of this country. From the seed thus obtained he raised a great many beautiful varieties of various colours, some of them exquisitely formed, and perfectly symmetrical, and, consequently, the majority of our present collections came from this source, having been obtained by Mr. Salter, of Hammer-smith. Still, I find coloured plates of beautiful Pompons in the Society's "Transactions," as far back as February, 1821.

The French gave it the name of Pompon, on account of its small compact bloom, resembling the tuft or pompon on a soldier's cap.

The following is the method adopted by me in the culture of large varieties in five-inch pots, from cuttings in June:—Last year I purchased all Mr. Salter's and Mr. Bird's new varieties. They were delivered to me in May, and I planted them out in the borders on receiving them, and allowed them to become naturalised to the smoky atmosphere for three weeks, which brought them up to the first week in June. I then took the tops off 3 inches long, and put the cuttings into 60-sized pots, one in each pot, draining the pot with a little cocoa-nut fibre, and filling up with mould composed of half light loam and half silver sand. I then plunged the pots in the front of a cucumber-frame, of the temperature of new milk, and shaded for a fortnight, giving a little watering occasionally. By the 1st of July they were well rooted. I then repotted them into five-inch pots drained with cocoa-nut fibre, the compost being two-thirds fibrous maiden loam from Epping Forest, one-third rotten dung, and one-third decayed leaf mould, pressing the mould firmly round the sides of the pot. I then put them in a cold frame for nine days with a little air to harden them off, and afterwards removed them to a sheltered, sunny spot for three weeks, attending to the watering, and every evening syringing the foliage to wash off the fallen soot, and keep off insects:

At the end of three weeks I plunged them three parts down in the front of the border, making the hole much deeper than the pot in order to obtain a free drainage. I then commenced giving weak liquid manure, composed of horse, sheep, and cow dung, all mixed together in a tub, and this I continued to follow up till they showed the colour of the flower. As soon as they began to show and throw out their side shoots I picked these out, and continued to do so till they showed their flower-bud, which was in the end of August. When the bud was properly formed I took off the side shoots on each side of the bud, where the bud looked healthy and promising; but I was obliged to let several go on to the second shoot. These did not bloom quite so early, but all did very well. The average height was 18 inches, with healthy foliage to the rim of the pot, and the blooms as perfect and nearly as large as those plants in the borders with unlimited space for growth. They bloomed in the first week in November, and attracted more notice than all the other flowers on account of the short foliage.

This system of growing large, well-shaped blooms in small pots would give very attractive specimens for exhibitions, and they might afterwards be brought into use for decorating greenhouses or cottage windows, and be kept in bloom for a month, and it is far preferable to cutting the bloom off to show, and afterwards perish in a day or two. Some of the best varieties to grow for this purpose are, of the larger kinds—Antonelli, Cardinal Wiseman, Her Majesty, Lord Palmerston, Princess Alexandra, Talbot, Cherub, Dido, Duchess of Wellington, Dupont de l'Eure, Emily, General Harding, General Slade, Globe, Ion, Jardin des Plantes, Julia Grisi, Lady Harding, Little Harry, Lord of the Isles, Madam Lebois, Marshal Duroc, Nil Desperandum, Novelty, Plutus, Raymond, Rifeman, Sparkler, Vesta, and Yellow Perfection. Of the small kinds, or Pompons—Fairest of the Fair, Julia Engelbach, Lilac Cedo Nulli, Cedo Nulli, Golden Cedo Nulli, Andromeda, Bob, Christiana, Hélène, Graziella, Jessie, Miss Julia, Mustapha, Sainte Thais, and Pyramidalis.

If the grower prefers a quantity of blooms instead of very large single ones, the flower-bud should be taken off, and the stopped side shoots allowed to remain. These will produce seven or eight blooms, but they will not flower as soon as the single bloom.

SEEDING THE CHRYSANTHEMUM.

The following mode I saw practised in Guernsey, where I went

four years ago, at Christmas, to look after some new varieties. At the town of St. Peter's, which is built on a rock a considerable height above the sea, I found the Chrysanthemum seeded freely, and that many of our newest and best varieties were raised in an alcove on the top of a rock. About one hundred pots were crowded together in the dry, and all the late blooms of the season were full of seed half ripe. I saw the petals had been carefully cut off with a sharp pair of scissors close to the florets, avoiding disturbing the pollen. The buds were quite firm with the seed. I have practised the same mode myself with perfect success. Mr. Wyness, of Buckingham Palace, has also raised a great number of very good varieties. He takes the seed off in February, and puts it into his pocket to dry for a week or two, and then sows it in a sharp heat in silver sand, and it comes up in nine days. I am persuaded that any one can seed them in the greenhouses or dry stoves in this country if kept free from damp.

INSECT ENEMIES.

The Chrysanthemum, like the Rose, Holly, Celery, and some other plants, is injured by having its leaves mined by caterpillars, which reside within the leaf and feed upon the parenchyma or pulpy part of the leaf; for if the injured leaves are examined the interior will be found quite destitute of pulp, and to contain one or several small green grubs of different sizes, which have eaten all the interior, leaving only the two surfaces of the leaf entire, and those very thin. The grub when feeding may be observed through the transparent surface of the leaf, using the two bent hooks or mandibles which it has the power to retract within or protrude from the mouth like a pair of scrapers, and by the action of which the parenchyma is entirely destroyed, and brought into a state to pass into the mouth of the larva without difficulty. When the grubs are full grown they quit the leaves and descend into the earth, where they shortly afterwards gradually become pupæ, and appear to lose all vitality, their form becoming shorter and oval, with the segments distinct and terminated at each end by two obtuse points. In this state the insect remains buried in the ground until the following spring, when the warmth gives birth to the imago of one of the most beautiful of our species of two-winged flies, which after throwing off its pupa skin and bursting through the hardened pellicle of the larva, crawls to the surface of the ground and takes flight, generally during the months of July and August; but more or less throughout the summer. There is no doubt but like the house fly, a succession of generations is produced throughout the season.

The insect of which the caterpillar mines Chrysanthemum leaves, belongs to the Dipterous or Two-winged genus, *Tephritis* of Fabricius, and is the *Tephritis artemisiæ* of Curtis, and the *Tryptera artemisiæ* of Walker, in the "Entomological Magazine," No. XI., page 84. The fly itself is about one-sixth of an inch long, and the expansion of the wings when fully extended is about one-third of an inch. It is of a pale yellowish-buff colour with a few black hairs, especially at the sides of the thorax (breast). The wings are limpid and slightly tinged with a yellowish colour, having several black spots of various shapes and sizes, and three uninterrupted bands across the body vary, in different specimens, from a rusty brown to a shining black. The head is buff with black lateral hairs, and the wings are marked with various limpid spots of various forms and sizes. In some specimens the dark marking of the wings is varied with a pale copper colour, and these present a still more beautiful appearance, the under side of the body being of a paler yellow, with the abdomen and thorax highly polished.

To destroy this perfect fly seems impracticable: therefore, the extermination of the insect must be looked to from the earliest time of their appearance in the caterpillar state. Picking off the infested leaves, or the crushing of the larva between the finger and thumb without destroying the leaf, appears the best and only mode likely to prove successful, if adopted in the beginning of summer, as the destruction of one grub at that period will not only prevent the production of a numerous progeny, but will also insure the better growth of the yet tender plant. The motions of the fly are also very peculiar, for when seated upon a leaf in the sunshine the wings are carried partially extended and at the same time partially elevated, and there is a sidling kind of motion which is possessed in common with but few other two-winged insects. It is generally found in the perfect state basking on the broad leaves of the Laurel and similar-leaved plants, as well as on the Chrysanthemum.—J. BROOME.

[The foregoing is a lecture delivered by Mr. Broome, whose cultivation of the Chrysanthemum in the Temple Gardens is so well known.]

THE PANSY.

ITS PAST HISTORY AND FUTURE PROSPECTS.

It may seem strange that I should occupy myself with a plant so common and old-fashioned, but like many things in other departments as well as in that of flowers, "it was in high repute once." Its day has not entirely gone yet; for some elderly gentlemen, occupying gardens in happy rural retreats, may still be found patronising a flower whose name harmonises so well with the abodes which it assists in adorning by its beauties. Neither has the fashionable florist entirely discarded it, and the list of prizes at country horticultural shows often contains one or more for Pansies. The pages of *THE JOURNAL OF HORTICULTURE* have from time to time been the means of placing its merits before the world as a bedding plant, and other modes of dealing with it have also been occasionally set forth; but as the articles on the subject have probably been lost sight of, a brief review of its merits, together with a slight sketch of its past history and present position, may not be unacceptable at a time when the great diversity of plants we possess renders it no easy matter to select the best.

It is impossible to say at what precise period the parent of our garden varieties of Heartsease, or Pansy, first attracted the attention of some zealous and far-seeing florist, who either spared it while destroying the other weeds in his garden, or transplanted it thither from the corn field or waste where he found it growing, for the plant (*Viola tricolor*), is a native one. At whatever date it was first introduced into gardens, the beginning of the present century found it an occupant of our mixed flower-borders, and in a state very considerably improved as compared with the parent; and its convenient mode of reproducing itself from seed, served the twofold purpose of originating new varieties and new plants to supply the place of the old ones, which seldom survived the hardships of half a dozen years.

The Pansy, however, was never honoured with much attention until about the year 1825, when its great adaptability to improvement, and the almost incalculable manner in which it could be propagated, as compared with the *Auricula*, *Ranunculus*, *Tulip*, &c., by which it had been preceded, led some enthusiastic person to bring it into notice; and so rapid was the improvement in its form and colours, that the botanist seemed almost at a loss whether to set down the fashionable occupants of a pan of Heartsease at a flower show as belonging to the genus *Viola* or not.

That all the improvements were effected at one time and by one individual it is scarcely necessary to say was not the case. A long category of names, including most of the celebrities of the day, lent able and skilful hands to the work. Amateurs and professionals alike entered into the spirit of the time, while censors settled the points by which the merits of each flower were to be judged. This work, of course, occupied some time; but I believe there was no previous example of a plant so quickly becoming fashionable, and at the same time so rapidly approaching perfection. The *Dahlia* was in the field some few years prior to it, but was several years in making much progress out of the single condition in which it first reached us. The Pansy, however, from being a second-class border flower, was quickly elevated into the condition of an occupant of the same beds that the *Tulip*, *Ranunculus*, &c., had held years before. Like them, the opening of fresh flowers was watched with interest. I believe the best varieties then in cultivation were first dignified with distinct names about 1829; and from 1832 to 1842 may be regarded as the most fashionable period of this flower.

The claims of other plants, and the changes in the public taste by the introduction of plants available for what we now call bedding purposes, were a heavy blow to florists' flowers; for although the Pansy continued to be well represented, and in many cases well patronised, its showy antagonists—the *Verbena*, *Petunia*, and other flowers, forced it from the position it once had; and though various attempts have been made to reinstate it by the introduction of varieties said to possess merits qualifying them for bedding purposes, it is only in some isolated places where these have been successful. It is, therefore, for other purposes than the ordinary summer decoration of the parterre that we must look for the Pansy again attracting attention.

Although, as we have stated, the Pansy has receded before the more fashionable occupants of the parterre of the present day in most places, there are localities where it still retains a respectable place, and these are where our variegated and other *Geraniums* do not succeed. The moist atmosphere of the north is more in accordance with the welfare of this plant than it is with that of many of its rivals, and in such situations beds of Pansies present a cheerful appearance. On the contrary, in dry sunny districts, with long periods in summer without any rain, this plant falls a victim to mildew, which it is not easy to arrest. Some years ago I had a tolerably good collection of show varieties of this plant, but one or two hot summers in succession reduced them sadly; so that eventually a yellow one called, I believe, Hon. Mrs. Harcourt, was the last survivor of a long array of names, aristocratic, warlike, and I fear I must say vulgar, for the caprice of those who give names to new plants or varieties descends to oddities as well as soars up to celebrities. Of this, however, it is not my purpose to speak; but continuing the history of the Pansy, I may say that at the present day the number of show varieties falls short of what it was twenty years ago; and I may also add, that the attempted introduction of very dark varieties into the bedding system did not receive much patronage, so that it has been left for another move in the history of the Pansy to again restore it to favour.

As before stated, the long dry summer in the south of England was sadly against the Pansy doing well, and in very many cases was fatal to it entirely. Though not an annual, its original state as an occupant in a corn field led to its destruction almost every year, and consequent reproduction by seed. This condition, however, was in some degree altered in the cultivated plant; still the tendency of the plant was to succumb when it had flowered and ripened seed, and when its roots felt the scorching effects of a bright sun in the dog days, for mildew carried off large numbers. It was, therefore, not without feelings of much satisfaction that some eight or ten years ago a new race of double Pansies was brought out, which certainly possess the qualification of withstanding the heats of summer better than any of the single sorts by which they were preceded. For many years I have disregarded all others but the double kinds, and have often turned them to useful account for furnishing the beds in winter, by striking cuttings in August, and planting them as soon as the beds were at liberty in autumn to receive them. Their tidy, stocky appearance improved the aspect of the beds; and, planted amongst Roses or in mixed borders of herbaceous plants, the double Pansy is always worth a place. The only drawback to the kind I have had so long is its liability to return to the single condition from which I expect it was originally a sport. Perhaps one or two plants in a bed may return to the condition, or parts of plants may do so; but in other respects the double is as perfect as could be wished, and the flowers bunch well in small bouquets.

I am glad, therefore, to see that other varieties in the double form are making their appearance, and hope they will be improvements on those we possess. I do not know the qualities of the one lately advertised in the columns of *THE JOURNAL OF HORTICULTURE*, but I should like it all the better if it were a clear bright yellow without the least tinge of other colour in it. Next to that, a good double white would be an acquisition. Perhaps I may be fastidious or whimsical in my choice; but I like best to look at a flower when in a growing state and attached to the plant, when, it is needless to say, its appearance differs widely from what it presents when forming along with others a bouquet, stand, or pan. In the latter case the artificial arrangement to which the flowers are subjected differs so widely from the contrast they individually would have to the plant that produced them, that a bed of flowers and a bouquet must ever be regarded as widely different. It is, therefore, to the clear yellow and clear white of the double Pansies that we must look for our flower-garden favourites in future; and however meritorious mixed coloured ones may be, there is no place for them in the bedding department.

It is hardly necessary here to advert to the easy manner in which the Pansy is propagated. Cuttings of the small wiry shoots from the centre of the plant are best, but the outside branches will also grow. All the preparation that is required is a little river sand spread over any border and slightly worked-in, a little more sand being placed on the top; then the cuttings may be put in and shaded for a week or two, watering of course when necessary. It is seldom that they are struck under glass. It is not unusual to put in cuttings of other hardy herbaceous

plants at the same time—as *Alyssum*, double *Rockets*, *Phlox*, *Pentstemons*, &c.; and if advantage can be taken of dull weather to do this work, the success will be the more certain.—J. ROBSON.

DISAS FROM THE CAPE.

AN answer is given to a question relative to these *Ochids* in the last Number, from which I beg respectfully to differ entirely, and by following it, I am inclined to think, "FRANK" would lose the best part of his collection. I do not know by name any of the *Disas* there mentioned except *grandiflora*, but they are probably allied species requiring the same treatment. That treatment I have more than once spoken of in *THE JOURNAL OF HORTICULTURE*; and shall, therefore, now merely say that it consists in treating the *Disa* in a totally different way to *Ochids* as generally so called. This beautiful terrestrial *Ochid* inhabits a ravine on the top of Table Mountain at the Cape of Good Hope; and as that is most frequently covered with the mists from the ocean, it will be at once seen that at so high an altitude, where the thermometer sinks to 32°, *Ochid*-house treatment would not suit it. I have seen quantities of *D. grandiflora* with my friend Mr. Leech, of Clapham Park, and have through his kindness a plant, now most vigorous, which will throw up its blooming-stem shortly; and this has been subjected simply to greenhouse treatment, with this addition—that it has stood in a pan of water ever since the autumn, and will continue to be so treated. I do not believe you can give it too much moisture; and I would advise "FRANK" to pot his into small pots in peat and sand, give them a good soaking, and, when the signs of growth manifest themselves, to keep them continually wet in a shady part of the greenhouse. Avoid the stove by all means. I should be glad to know by-and-by whether he has succeeded, and whether the sorts he names are all species, or whether some are not varieties of *D. grandiflora*. He may be confident that the only treatment that suits them is the one detailed above, for the knowledge of which we are indebted to Mr. Leech of Clapham.—D., Deal.

[We believe this treatment to be right; but we may hear on the subject from the authority who furnished us with the answer in our last.—EDS.]

THE ROYAL BOTANIC SOCIETY'S FIRST SPRING SHOW.

THE opening Show for the season was held on Saturday last, and for the early period of the year the display of flowering-plants was very good; whilst the beautiful cut *Roses* shown by Mr. W. Paul, of Waltham Cross, and Messrs. Paul, of Cheshunt, formed of themselves a most attractive feature. The objects exhibited were arranged with Mr. Marnock's usual good taste, on turf stages in one of the large tents, and the effect of the whole, especially when viewed from the end next the conservatory, was excellent.

Of *Hyacinths*, excellent collections were exhibited by Messrs. Cutbush, of Highgate, and Mr. W. Paul, who each furnished one hundred pots, the varieties being nearly if not exactly the same as those shown at Kensington on the 18th inst. Early *Tulips* were likewise shown in good perfection by both these gentlemen.

Of foliage and flowering plants, good collections were shown by Messrs. Veitch, A. Henderson & Co., Williams, and Bull.

Messrs. Veitch had a fine plant of *Rhododendron jasmiflorum*; Princess Bacciochi *Camellia*, a very handsome plant; *Maranta vittata*; *Eriostemon densifolium*; *Chamærops humilis*; and *Azalea Carminata*, a fine pyramid of crimson bloom.

Messrs. A. Henderson's plants consisted of *Eriostemon densifolium*, a nice bushy plant; *Boronia pinnata*; *Aphelexis macrantha purpurea*; a handsome plant of *Pandanus javanicus variegatus*; and large and fine specimens of *Dracæna ferrea* and *Maranta variegata*.

Mr. Bull contributed fine specimens of *Azalea Triumphant*, *Cibotium princeps*, *Gleichenia flabellata*, very large plants of *Pandanus utilis* and Chandler's *Elegans Camellia*, also *Yucca aloëfolia variegata*.

Mr. Williams, of Holloway, sent *Vanda suavis*, with a handsome spike of its beautiful flowers, *Pavetta borbonica*, *Cordylina indivisa*, *Azalea Empress Eugénie*, and fine plants of *Vanda insignis* and *Dendrobium nobile*.

Messrs. Lee, of Hammersmith, were likewise the exhibitors of a fine collection of plants, the same as that referred to in our columns of last week.

From Mr. Young, gardener to R. Barclay, Esq., of Highgate, came *Weigela rosea*, now well known as one of our best flowering shrubs both for in-door and out-door work, *Coleus Verschaffeltii*, handsomely grown and some 5 feet across, *Rhododendron Blandyanum*, *Caladium bicolor splendens*, *Azalea Fielderi*, and *Maranta zebrina*. Messrs. F. & A. Smith, of Dulwich, likewise showed collections of stove and greenhouse plants.

There was a class for Coniferous or other hardy evergreens in pots; and here Mr. Standish, of Ascot and Bagshot, stepped in with his new Japanese introductions, among which were the female plain-leaved *Aucuba*; *Retinospora pisifera aurea*, with its golden-tipped foliage; *Sciadopitys verticillata* and its yellow variegated variety; *Osmanthus ilicifolius* and its variety *aureus*; *Retinospora obtusa*; *Thujopsis dolabrata*, and the variety of the same with white variegations, and some others of the new acquisitions which we owe to Mr. Fortune's explorations.

Camellias were contributed by Messrs. Veitch, who had handsome plants of *Valtearedo*, *Alba plena*, *Alexina*, *Marie Morren*, a deep rose, and *Drysdali*; whilst the fine new varieties, *Queen of Beauties*, *Bicolor de la Reine*, and *Lavinia Maggi*, were exhibited by Mr. Standish.

Of Roses in pots, some magnificently flowered plants, which were the admiration of every one, came from Messrs. Paul and Son, of Cheshunt. They consisted of *Victor Verdier*, *Virginal*, *Madame Julie Daran*, *Jules Margottin*, *Goubault*, *Anna de Diesbach*, *Elize Sauvage*, *Madame de St. Joseph*, *Comtesse de Chabrillant*, *Solfaterre*, *Triomphe de l'Exposition*, *Louise Odier*, *Paul Ricaut* (the only one to which exception could be taken), and *l'Enfant Trouvé*, a beautiful yellow Tea.

To the cut Roses we have already alluded as affording a very attractive feature to the Show; but it would be tedious to enumerate all the varieties which were exhibited. It will suffice to say that nearly all the leading varieties were included in the collections, and that the flowers themselves were, with but few exceptions, all that could be desired.

Of other objects—Cyclamens were shown by Mr. Howard, gardener to B. Edgington, Esq., Wandsworth; Mr. Wiggins, gardener to W. Beck, Esq., Isleworth; and Mr. Holland, of Spring Grove, Hounslow; and the whole of the pots were very creditable to the exhibitors. Pansies came from Mr. Bragg, of Slough, and Mr. James, gardener to W. Watson, Esq. Chinese Primroses from Messrs. Cutbush and Mr. Todman. Cinerarias from Mr. Holland and Messrs. Dobson, of Isleworth, who, among others, had *Princess of Wales*, which seemed a promising sort, white, with a magenta edge.

Messrs. F. & A. Smith, of Dulwich, had several handsome double Chinese Primulas, seedling Cinerarias, their new double white *Azalea Flag of Truce*, and other plants, previously exhibited at Kensington.

In the class for new and rare plants Mr. Bull, of Chelsea, was a principal exhibitor. Many of the objects which were brought forward here have, however, been noticed in our previous reports, such as the *Yucca quadricolor* and *Stokesii*, *Pandanus elegantissimus*, *Nephelaphyllum cordatum*, &c. He had, besides, two bright scarlet *Amaryllises* called *Conqueror* and *Fire King*, which were very showy, and *Bougainvillea spectabilis* flowered in a four-inch pot, the bracts being small but well-coloured.

Messrs. Veitch had *Camellia Giannina Milli*, a pretty cupped white variety; *Filippe Parlatores*, carnation-striped on a bluish white ground; and *Giardino Santarelli*, the centre petals deep rose, and the marginal white; also *Dracena striata*, a highly ornamental foliage plant, especially the young leaves, which are of a bright pink; and *Hoteia japonica* with very ornamental spikes of small white flowers.

Messrs. A. Henderson & Co. had the lavender-flowered *Hebeclinium atro-rubens*; *Tropæolum Ball of Fire*, the flowers of which are of a splendid bright scarlet; and *Dracena cannæfolia* with immense dark green leaves. And Mr. Parker, of Tooting, among other things, contributed *Funkia univittata* and *Symphytum officinale* with the leaves deeply margined with pale yellow. *Phalænopsis Schilleriana* was exhibited by Mr. Williams, of Holloway, and Mr. Wiggins, each plant having a handsome spike of bloom, that on Mr. Wiggins's being the larger. Messrs. Lee, of Hammersmith had *Camellia Lavinia Maggi*, *Hermione*, a double white *Azalea* with here and there a carnation streak; also a box of cut Camellias.

FLOWER-GARDEN ANNUALS.

THE accompanying list of annuals has been sent to us for approval by a correspondent from Newport, Monmouthshire, and we append the remarks of a good authority; but we shall be glad to learn the opinion of others, as catalogues of annuals have become so extended of late, that it is possible many useful species may have escaped the notice alike of our correspondent and his adviser. We, however, give the list as sent us, followed by the notes that have been prepared on the subject.

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|---|---|
| 1. Asters—Dwarf Chrysanthemum-flowered and Giant Emperor. | 37. Marigolds—African and French, tall and dwarf. |
| 2. Athanasia annua. | 38. Mimulus cupreus. |
| 3. Asters—Bouquet. | 39. Nola alba. |
| 4. Ageratum mexicanum nanum. | 40. Oxysora. |
| 5. Anagallis, mixed. | 41. Oxalis tropæoloides. |
| 6. Arctotis grandiflora. | 42. Poppy—French, mixed. |
| 7. Browallia, mixed. | 43. Phlox Drummondii, mixed. |
| 8. Brachycome iberidifolium. | 44. Rhodanthe Mangelsii. |
| 9. Clarkia pulchella flore pleno. | 45. Stock—White wallflower-leaved, Ten-week, German, and Dwarf Bouquet. |
| 10. Chrysanthemum Burridgeanum. | 46. Salpiglossis, mixed. |
| 11. Calendula officinalis superba. | 47. Schizanthus, mixed. |
| 12. Centaurea gymnocarpa. | 48. Spraguea umbellata. |
| 13. Centa alba. | 49. Schizopetalon Walkeri. |
| 14. Campanula pentagonia. | 50. Silene armeria alba. |
| 15. Cotula aurea. | 51. Sabbatia campestris. |
| 16. Calandrinia umbellata. | 52. Viscaria, mixed. |
| 17. Calliopsis nigra nana. | 53. Zinnia elegans flore pleno. |
| 18. Calendula pluvialis. | |
| 19. Dianthus chinensis Heddewigii. | |
| 20. Erysimum Peroffskianum. | |
| 21. Eucharidium grandiflorum album | |
| 22. Feverfew, double white. | |
| 23. Gilia tricolor. | |
| 24. Gaillardia grandiflora. | |
| 25. Grammathe gentianoides. | |
| 26. Gypsophila muralis. | |
| 27. Heliphila araboidea. | |
| 28. Isotoma petraea alba. | |
| 29. Iberis umbellata. | |
| 30. Indian Pink, double white. | |
| 31. Iberis grandiflora alba. | |
| 32. Kaulfussia amelloides. | |
| 33. Larkspur, tall Stock-flowered (blue). | |
| 34. Leptosiphon, new French hybrids. | |
| 35. Leptosiphon densiflorus albus. | |
| 36. Lobelia speciosa. | |

Ornamental foliage.

54. Venus's Navelwort.
55. Crimson Orach.

Scented Annuals.

56. Mignonette.
57. Limnanthes Douglasii.
58. Abronia umbellata.
59. Cedronella mexicana.
60. Amblyolepis setigera.
61. Nemesis floribunda.
62. Centranthus ruber.
63. Scabiosa, dwarf scarlet.
64. Amberboa moschata and odorata.

Everlastings.

65. Helichrysum compositum maximum, mixed.

[It is no easy matter to take up a comprehensive catalogue of annuals of the present day, and give a decided opinion on what is really good. Many who grow flowering-plants on an extensive scale grow but few annuals. The mode of keeping half-hardy plants through the winter and propagating them in the spring has of late years been so much simplified, and is now carried to so much greater extent than it was years ago that, comparatively speaking, few annuals are grown on what is called the large bedding-out plan. Nevertheless annuals have their merits, and it is to be hoped some one better acquainted with them than I am will give us the benefit of his experience; but as most of those mentioned above are well known, a hasty glance at each will suffice. Additions thereto will be treated of afterwards.]

Commencing, therefore, in the numerical order they are placed in, we may say that Nos. 1 and 3 are good; 2, not known; 4, grows taller and flowers later than the same kind kept through the winter, and propagated in spring; 5, middling, only presents few flowers to look at in the distance; 6 is said to be good; 7, too tender in ordinary seasons for out-doors; 8, requires a dry soil; 9 and 10, both good; 11 and 13, varieties of *Marigold*, than which nothing looks better when they are good; 12, rather coarse; 13, not remarkable; 14, there may be some other *Campanulas* added as well as the one given—*Venus's Looking-glass* belongs to this genus; 15, not known; 17, 19, 20, and 21, all good; as likewise are 22, 23, and 24, all favourites; 25 is said to be good; 26, not remarkable; 27, good; 28, if resembling *Isotoma axillaris* it is good; 29 and 31, *Candytuft*, of which there are several good varieties; 30, also affords many useful varieties; 32, good; and 33, deservedly so, several varieties deserving attention; 34 and 35, good and hardy; 36, perhaps the best of all annuals, though not an annual either; 37, indispensable, sow several varieties; 38, requires rather moist ground; 39 and 40, good; 41, not much acquainted with; 42, good for shrubberies; 43, on a peaty or moist soil is very fine, but useless in dry places; while 44 is quite at home there; 45 needs no commendation; 46, I have never been successful with; 47, fine; 48, said to be good; 49, do not know the variety; 50, said to be good; 51, too tender for out-doors; 52, good and hardy; 53, good, the single is, perhaps, better than

the double; 54 is certainly wrongly placed; while 55 is inferior to *Perilla nankinensis*; 56 is good; 57, only slightly scented; 58, showy plant; 59, a stranger; 60, said to be good; 61, not known; 62, not much scented; 63, more remarkable for flower than scent; 64 are related to *Eschscholtzia*.

Although the above list comprises as many names as most small growers would care to have, there are, nevertheless, several other good annuals from which a selection could be made as useful and showy as that described above; and if we except the *Asters*, *Stocks*, and French and African *Marigolds*, there are four others omitted in the list that I would place before any that are in it. These are *Saponaria calabrica*, *Collinsia bicolor*, *Nemophila insignis*, and *Portulaca*. These seem to me so indispensable where annuals are grown, that I am surprised at their omission. Tastes, however, differ, and some one else may suggest others which may be thought still more deserving; but as my list is not yet complete, I may say, that in addition to those of which the names are already given, the blue *Convolvulus* is worthy a place. *Senecio elegans* and some of the *Lupinus* are also pretty; and *Delphinium chinense* as well as others is good. The double *Sunflower*, *Helianthus*, is also an excellent adjunct in the background; while *Virginian Stock*, *Scarlet Valerian*, *Bartonia aurea*, and some of the *Oenotheras* and *Godetias*, are all useful in their way. The dwarf and pretty *Clintonia pulchella* is also an acquisition, not less so being *Linum kermesinum* and others. The old *Eschscholtzia crocea* and others are rather coarse, but some admire them; and a bed of seedling *Petunias* lasts through the season well. *Venidium calenduleum* is also good; and, perhaps, the prettiest of all blue is a bed of *Salvia patens*; while *Lotus jacobaeus* and *Martynia fragrans* ought not to be forgotten. *Trachelium coruleum* is also deserving of a place everywhere. I believe some of the *Aquilegias* are good, but I have never been successful with them. Many other plants, however, might be added, but I leave the further extension of this list to other hands; I will however, mention a few having remarkable foliage which our correspondent has wisely placed in a class by themselves.

In the first place stands *Perilla nankinensis*, a plant much better than *Purple Orach*. Equal with this, but not so extensively grown is, I believe, *Amaranthus melancholicus ruber*; while in a like strain, though beautiful-flowering plants too, are *Lovelies-bleeding* and *Prince's Feather*. All these have a bronze-coloured foliage. In direct contrast with them is *Salvia argentea*, a white-leaved plant, woolly, and conspicuous. In the large-leaved class are some of the genus *Ricinus* or *Castor Oil Plants*. *Marvel of Peru* is also a singular-growing object, though not more pretty and graceful than *Canna indica*, or some of its kindred species. In a smaller way are some pretty *Grasses*, as *Stipa pennata*. The *Ice Plant* is also singular; as likewise is *Tobacco*, and the berry-bearing *Phytolacca decandra*, which, however, is very tall, though not more so than *Heracleum giganteum*; and I do not know that either of them excels a plant of the common *Hemp* for beauty of foliage. This list, however, may be extended so far as to become, perhaps, as numerous as the other.

In addition to the three classes given by our correspondent, he might have added a fourth for creepers, which would have been as interesting as any. *Cobaea scandens*, *Maurandya Barclayana*, *Eccremocarpus scaber*, *Tropaeolum peregrinum*, and some others are all useful; while *Sweet Peas* and some of the *Tropaeolums* are also indispensable—in fact, the dwarf varieties of *Tropaeolum* ought to have a prominent place in the list of flowering-annuals, which I find I have omitted. But it is a most difficult task to limit the number of species of annuals which different individuals might recommend; and supposing a person restricted the list to twenty, might I ask what would these be, omitting *Stocks* and *Asters*, which are every one's favourites? It is questionable if anything like unanimity would exist amongst the first ten persons that might be asked the question: nevertheless, the question is one well worth asking, as I confess my knowledge is far from being perfect in this matter.]

GARDEN ENGINE.

ABOUT this time last year I purchased from Mr. G. Heaven, High Street, Birmingham, a garden engine, price 9s. It throws a continuous stream to a distance of 40 feet, and is now, after twelve months hard work, as good as ever. The workmanship is rough, but there is not likely to be any

injury done to this engine which a tinman could not remedy. I was told that a Frenchman, too poor to take out a patent, was the maker.—E. H.

MESSRS. CUTBUSH'S EXHIBITION

OF HYACINTHS AND OTHER SPRING FLOWERS.

COCKNEY though I am, and born within the sound of Bow bells, 'Ighgate' ill had until last week been a *terra incognita* to me. I had never toiled up what to Londoners is, I dare say, quite a *Snowdon* or *Grassfjel*—had never admired the wondrous wit at which I suppose successive generations of citizens have laughed as they sat on those seats, where admonitions to take care of defacing them are graven with such laconic wit, that a man must be indeed bent on mischief who could do so; and even now I had not attempted the feat, had not frequent and pressing invitations from Mr. James Cutbush and my own love for the *Hyacinth* tempted me to do so. And although a correspondent has given his ideas on the subject already, I hope it may not be out of place to record my impressions of this Exhibition, so well worth the visit as it was to all who have a real love of flowers.

As *Hyacinth*-growers this firm has stood at the top of the tree for many years; and although I am not going to "reveal the secrets of the prison-house," I may say that these importations of bulbs from the first growers in Holland have during the past ten years increased twelvefold, so much more widely spread is the taste for floriculture, the stimulus to bulb-growing having been in no slight degree augmented by this very Exhibition of which I am now writing. I was quite assured of a kindly reception from Mr. Cutbush, and am indebted to him for a very pleasant morning spent amongst his spring flowers.

The greenhouse in which the display takes place abuts on the residence, and skirts it at two sides. As arranged for the Exhibition it is filled up with a stage, the back reaching up the back wall to within a few feet of the top, and with a broad shelf running round the front. The arrangement displayed considerable taste, and gave a very pleasant and bright appearance to the house. On the lowest shelf there was a row of double *Primroses*, yellow and lilac alternating. Above them was a row of the dwarf miniature *Rose* in nice bloom. Above that again a row of *Primulas* and *Mignonettes*, the *Cyclamen* on one side of the house taking the place of the *Primula*. Above that again a row of *Tulips* in pots, then a row of *Cytisus* and *Deutzia scabra* alternately; while the shelves above these were crowded with a gay mixture of *Azaleas*, *Camellias*, *Dielytra*, *Kalmias*, *Epacris*, *Cinerarias*, *Narcissus*, and other spring flowers—pots, stages, and all being hidden by the profusion of bloom and quantity of foliage. On the front shelf the *Hyacinths* were arranged, all being placed in 24-pots, and then covered with green moss gathered in Epping Forest. This plan has been adopted in preference to that formerly used of plunging the pots in moss, which was found to be too heating for the plants.

I have been anticipated in the lists I had taken of what seemed to be the most beautiful varieties; and I hardly think it is worth while again filling up space with a mere list of names, for there can be but very little difference of opinion as to what constitutes a good *Hyacinth* and what flowers come up most closely to the required standard. Many of the new varieties—and we must recollect that it will be years before these come down to the reach of ordinary mortals—cost two guineas, which is a large sum for a plant; but for a plant that only gives a good bloom once, and then must be consigned to the border, it is very high. And when we talk of improvement and the probability of something novel making its appearance, we must recollect that if a seedling be raised this year it will not come into general sale for nearly twenty years! hence we older ones must content ourselves with what we have, leaving to our juniors to look out for *Hyacinths* twice as large as anything we have now, and of all imaginable and unimaginable shades of colour. Mr. Cutbush informed me that of the beds of seedlings which he saw in Holland, by far the greater number were of that lilac shade of which *Haydn* and *Unique* may be considered as types—a colour more interesting to foreigners than to us, with whom I do not think it finds much favour.

I find that Mr. Cutbush's experience with the *Hyacinth* is the same as that of florists with every other flower, that there

are some seasons in which some kinds are especially good and others inferior—facts which are difficult to account for, but which are nevertheless true. He had told me that the bulbs were not so good this year as usual; but I am bound to say that I saw no evidence to that effect.

The collection of *Amaryllids* exhibited by Mr. Cutbush at the Show at South Kensington on the 18th were likewise in bloom, and finer bulbs I never saw; but the sorts generally wanted that breadth of petal which we consider necessary to form a first-rate flower, such as Mr. Williams's *Amaryllis Unique*. The treatment to which the bulbs had been subjected must have suited them very well, for they were of very large size and in full vigour of growth.

In the other departments of gardening Mr. Cutbush is making also great advances. The prevailing taste for Roses has induced him to erect a span-roofed house for the purpose of growing them and Vines. The stock looked uncommonly well, and contained all the best varieties of Roses. One is often tempted to ask what becomes of all the Grape Vines. At every nursery one sees that they are grown in great abundance, and all speak of them as selling well. Roses one can understand, but Vines are a different thing; and we must suppose that very few are left of the older plants, and that the new ones have taken their place. Bedding plants were also cultivated, and the usual assortment of nursery stock. I also noticed the, to me, interesting sight of a small beginning of a collection of *Auriculas*, grown not for sale, but as a little hobby of Mr. Cutbush.—*D., Deal.*

VENTILATING & WARMING HORTICULTURAL STRUCTURES.

THE articles upon this subject which have lately appeared in your Journal, are as highly instructive to the general reader as interesting to those whose knowledge enables them to understand the laws of aëration by the power of heat.

Having had much experience, and devoted much time to experiments in heating and ventilating, and having tried most of the systems for heating in general use for mansions, cottages, and horticultural structures, I have arrived at the conviction that the prevailing error is warming too much and ventilating too little. The great secret lies in combining the heating apparatus with a thorough ventilating system, and supplying a sufficient quantity of air, ever changing and circulating through the building at a proper temperature, without at the same time wasting in the chimney-flue more heat than is wanted to carry off the smoke and make the fuel combustible.

We can arrange a most economical and most useful heating apparatus for large establishments, by combining hot-water pipes with the *Polmaise*, or air-chambers having ventilating openings to regulate the quantity according to the change and perpetual alteration of temperature in the external air.

The public generally consider many of the newly-invented air-warming stoves, *Polmaise* and *Arnott's*, &c., to be failures. The principal cause why is, because the warm-air-chambers are too small to supply the proper quantity of air required to keep up the temperature, without overheating and destroying its life-sustaining properties. If we allow the air to take up the heat as fast as the fire gives it out, then the warm supply of atmosphere will not be burnt. It is through confining it too long in a small hot chamber that it becomes exhausted, and its properties destroyed. When the space required to be warmed is rightly apportioned to the apparatus employed, the air absorbs the heat as fast as it is generated without destroying the atmosphere. If we understand this rule we can use any system of heating for ventilation. Every living thing requires fresh air, plants as well as animals. Nature has provided sufficient for us all, and supplies it abundantly to the doors of the mansion, cottage, or other erection; but with doors and windows we try to keep it out, because the air in our climate is cold and damp, and, rather than admit it in that state, we try to live as long as we can in impure air, for the sake of comfort in our dwellings. To make air life-sustaining and healthy, depends upon ourselves. Cold or warm air has the property of supporting life, if it be good; but bad air destroys life. Air in circulation promotes health; but in a state of stagnation breeds disease.

The exhibitions of plants, from time to time, prove that when care is taken by the cultivator in this country he can imitate the temperature of our climate, and show clearly that heat properly

combined with air produces exotic plants equal to those of their own native homes, which are warmed by the sun. To be uniform in success will depend upon our power of assimilating an artificial atmosphere suitable to the wants of the nurslings in our conservatories.

This is a question that now requires more attention than it has hitherto received; and it is evident that no system of ventilation, unless combined with heating, can in this country provide what is wanted—that is, the knowledge how to make a comfortable and healthy artificial climate in our dwellings. A nobleman some years back, on observing my process of heating conservatories, addressed me thus—"I want you to make the climate of Italy in my own house. I cannot go to that country, but I desire its genial atmosphere." I carried out this order, not by shutting the air out, because had I done so we should have had no substitute for its healthful motion. Heat we could have, it is true; but heat is not air, and if we stop out the air we have nothing to warm. It was then and there I first adopted my plan.

We meet with people daily who are fitting-up heating apparatus, but who are not ventilating, without the slightest idea that such is the fact. I met a gentleman in the International Exhibition, 1862, who, like myself, was studying what was exhibited there as likely to be useful in the way of warming and ventilating. He told me he had been employed upon nothing but heating buildings for the last thirty years. He had fitted up 3000 apparatuses, but never combined ventilation therewith, only because he did not understand it. He could heat a building to any degree of temperature required; he wanted ventilation, but could not see anything in London worth coming from Leeds to examine. This statement was confirmed after the closing of that Exhibition; for if we refer to the Jurors' Report of Class X., Section B., Sanatory Improvements and Constructions in the International Exhibition, 1862, they say—

"As a general result it does not appear that the active thought stirring among men is in sanatory contrivances very great. The amount of education on the subject is still deficient, and all progress must be slow until the nation is brought up a little farther. There is, in fact, a desire for change, in some instances to the worse, from an ignorance of the past we have left behind. New ideas of a purely sanatory kind we have absolutely none before us. Although since 1851 the subject has grown widely, we know more of the condition of the air, more of the necessity of ventilation, and more of its difficulty; but the progress of our knowledge has not been seen in the Exhibition. Thus far we see a defect in it; the whole circle of human invention has not been exposed to view, and room is made for improvement in a future exhibition. Although we have not shown all that has been done, we must not forget that much is still undone. We have not learned the best mode of ventilating; we cannot warm and ventilate a small room so as to make it healthy and comfortable. The response in the Exhibition has not been so great as the intellect of the country led us naturally to expect.

"The great demand in this country is for warmth and dryness. Give these, and we are ready to ventilate sufficiently; deny these, and the whole population instinctively prefers bad air to cold-giving air: therefore if we ventilate sufficiently, we must warm."

There cannot be any question about there being room left for improvement, and for producing a better system of ventilating, combined with warmth, if we intend to convert the natural atmosphere into an artificial and healthy climate in-doors. Persons in the habit of attending horticultural exhibitions have frequently the opportunity of seeing prizes of flowers, fruits, and vegetables obtained by cultivators having no better systems of warming than the smoke-flue; but good gardeners understand how to assist Nature without doing her violence, and avoid going too fast with heat without plenty of air. Nevertheless, experience in horticulture convinces me that more information upon this point might be obtained if our horticulturists would set about ventilating and warming buildings to feed the plants, by supplying air as they have set about other departments of agriculture and horticulture, as, for instance, in manuring, or in thorough drainage.

To be further useful, and to meet the requirements of the poor, I have fitted-up a room to show how the common house stove can be converted into a fuel-saving, smoke-consuming, heating-and-ventilating apparatus, without costing more in the first construction of the building, but effecting a vast saving of fuel. Since I have shown this system to my friends, several have adopted it with much satisfaction. I have had an apparatus made for J. Walter, Esq., of Bearwood, for a national school he has just built at Sandhurst, near Wokingham, at his own expense. This plan can be seen in daily operation at my residence upon application.

What is wanted just now is the combination of practically-informed men to co-operate, to give publicly an account of what may be done; and this is most essential if we are to

put in a better appearance at any future exhibition. The Horticultural Society having appointed an implement committee to report upon heating and ventilating apparatus, I hope they will find out something new and more useful. I hope that this subject will before long be considered of such importance, that it will be taken up by a sufficient number of persons to make an instructive and interesting Society, to be called "The London Warming and Ventilating Associates' Society."—JOSEPH NEWTON, 30, *Eastbourne Terrace, Hyde Park.*

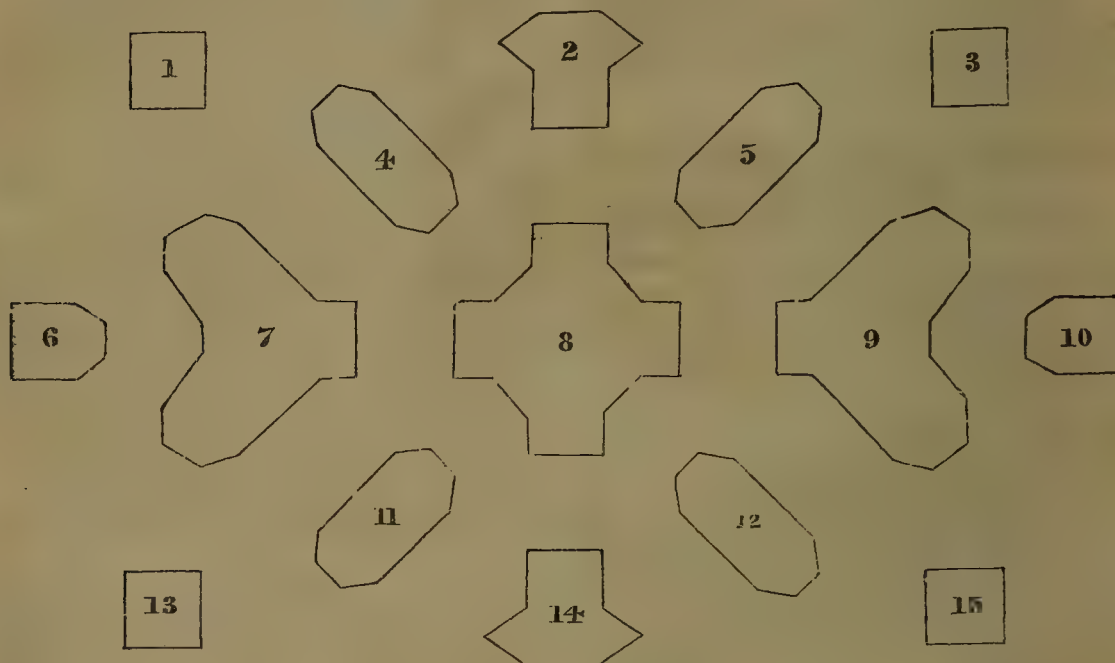
APRICOTS FAR NORTH.

A CIRCUMSTANCE to which I shall afterwards allude has impressed strongly on my mind, that the most satisfactory mode of cultivating the Moorpark Apricot (at least in the northern part of the kingdom), is by flued walls, or some analogous method of imparting heat without covering. In such gloomy, cold seasons as 1862, the tree is not able either to ripen the

fruit or to form flower-buds for the following crop without some such help; and in this neighbourhood, even in the most favourable situations, the Apricot trees are this spring almost destitute of blossom.

The wall of my kitchen containing the chimney, which, of course, is in constant use, is one of the boundaries of my property in this small town; and my neighbour, whose back court immediately adjoins, has availed himself of a right to nail his trees on my wall. He has just informed me that on an Apricot tree planted on that part of it behind my kitchen fire he has a most abundant crop, beautifully set, while on another tree at a short distance on the same aspect (west) there are very few blossoms. It occurs to me, that what the Apricot wants is heat sufficient to ripen the wood, stimulate the formation of flower-buds, and ward off spring frosts. The same agency when the summer is backward, will promote and insure the ripening of the fruit. It would appear, I think, that the tree is rather impatient of glass and close covering.—J. F., *Haddington.*

SMALL FLOWER GARDEN.



For this year I think of having No. 8, Purple King Verbena; Nos. 4, 5, 11, 12, yellow Calceolaria; 7, 9, plain-leaved Scarlet Geranium; 2, 14, Flower of the Day, mixed with Perilla or Veitch's *Amaranthus melancholicus*; 1, 3, 13, 15, Flower of the Day, mixed with blue Lobelia; 6, 10, *Koniga maritima*, mixed with blue Lobelia.

The above plan is only one-half of the garden. A walk 8 feet wide, edged with 5 feet of grass, divides the two beds No. 10, so that there is a corresponding arrangement on each side of the walk.—P. M. P.

[Your plan of planting will answer very well, and those beds of one colour we think you will like best. In another season you will gain variety by edging the beds. Your present principle of planting is centering, balancing, and a little cross-planting, and its simplicity will be its chief charm. The centre bed is of Purple King Verbena; and the eight beds round it are four of yellow Calceolarias, and two of the larger in Scarlet Geraniums, and two of Flower of the Day, mixed with Perilla or *Amaranthus melancholicus*. We did not find this *Amaranth* succeed well with us, and the Perilla will be too strong unless stopped very early, and so kept down that the little twigs shall mingle with the Flower of the Day. So used, the purple Spinach will also do well, and it makes with the Flower of the Day a nice soft bed to the eye.]

Your four corner beds, 1, 3, 13, 15, you propose to be mixed beds of Flower of the Day and blue Lobelia. We should have preferred something else variegated—as *Manglesii* Geranium, as your Flower of the Day will run in lines—as 1, 2, 3, and 13, 14, 15. The *Lobelia speciosa* or *L. erinus* will be too low for mixing with the Flower of the Day, unless the plants of the latter are small. If you retain Flower of the Day for these four beds, we would not mix but give a nice edging of *Lobelia speciosa*, with an outside single row of *Cerastium* next the grass. Something of the same objection appears to the two ends of your figure 3, 10, 15, 1, 6, 13, as the prevalent character would be white and blue.

We are doubtful if punching-out, as it were, 6 and 10 adds to the completeness of your figure. At any rate, if using 6 and 10, we would not employ variegated Alyssum and blue Lobelia, when their neighbours 3, 15, and 1, 13, were Flower of the Day and Lobelia. If we retained the Alyssum and wished to mix, we would use the soft lilac of *Verbena pulchella*, or *Verbena Charwoodii*. In either case the Verbena and Alyssum would be matched for strength. Nos. 6 and 10 would also do well if filled with crimson Ivy-leaved Geraniums, with an edging of Golden Chain. One charm of your little garden will consist in the good space you give between the beds.]

ERIDES MACULOSUM, VAR. *SCHROEDERI*.

Description.—An epiphytal herb with broadly strap-shaped, obtuse, and deeply emarginate oblique leaves, and a pendent, open, many-flowered panicle. Flowers very delicate, the sepals and lateral petals almost alike, obovate and obtuse, spreading, white tinged with lilac, and spotted with lilac rose. Labellum consisting of a pouch-like base, prolonged downwards into a slender arched spur, bordered above by a small tooth on each side, between which is a bifid tubercle; the middle lobe of the lip is, at first, suddenly expanded, then contracting from an angle on each side to a somewhat obtuse point, forming, thus, a narrow triangular-rhomboid limb, with the sides deflexed; the middle lobe pale lilac marked with rose, deepest at the base; the spur gradually shaded into bright yellowish-green.

History, &c.—This plant seems to bear a close resemblance to *Erides maculosum*, from which it can hardly be specifically distinct, although in the shape of the lateral teeth of the lip, and in the bifid tubercle between them, it appears to differ slightly. Considering the much greater difference between the other species, we prefer to regard this as a variety.

—A. H.

For an opportunity of figuring this very beautiful plant we are indebted to J. H. Schröder, Esq., of Stratford Green, Essex, in whose unique collection of Orchids it has blossomed several times, and by whom the following particulars are supplied:—"I purchased it at Mr. Stevens's sale, Covent Garden, being part of a small importation from the hills near Bombay. My attention was directed to it by its very distinct habit, and the remains of a flower-spike from every leaf. We have flowered it now for three years, and each year finer than the preceding, and should we be fortunate enough to attain its

native flowering habit, I need not say what a magnificent thing it will be. It appears to be a hybrid between *Erides crispum* and *maculosum*, and on that account I value it the more, as I do not think it is so likely to be introduced again."

Culture.—The following is the treatment recommended by Mr. Goode:—"The plants belonging to this lovely genus, to grow them to perfection, require to be placed, in the growing season, in the warmest and most humid part of the Orchid-house; and, in addition to the moisture suspended in the atmosphere, to be liberally syringed daily with tepid soft water. When, however, the plants are first imported, they must be thoroughly washed, both root, branch, and foliage, for until they are cleared of all kinds of filth it will be found impossible to grow them to anything like perfection. Rustic baskets, or pots with perforated sides, are the most suitable to grow them in, and the compost used should be very fibrous peat and sphagnum moss, liberally intermixed with charcoal in large and small pieces; press the compost close together, and to make sure that the plants are firm in the pots, use a few pegs to hold the soil together. Suspend the pot or basket close to the glass, and take care to keep a mild atmosphere at all times, and the plants when once established will then grow with great freedom. Water liberally, and shade in very sunny weather, and take care that the plants are not broiled by a too free admission



of air in immediate contact with them. When the growth is completed, and more especially after they begin to show bloom, they may be kept comparatively dry, but they must not at any time be subjected to a low temperature.—(A. in *Gardener's Magazine of Botany*.)

EDINBURGH HORTICULTURAL SOCIETY.

THIS Society held its first Exhibition of flowers and fruit for the present year on March the 18th, in the Music Hall, George Street. The striking contrast with regard to the weather which marked the present occasion, as compared with that which occurred at the first Exhibition last year, affords a striking proof of the fickleness of our climate. Last year it was a day of cold drizzling sleet and rain; on this occasion, although ushered in with a pinch of frost, the day was all that the most fastidious could wish for in March—a day of calm and sunshine. On such conditions depends to a large extent the success of a flower show, both in a financial point of view to the Society, and to the public in the amount of pleasure and instruction afforded by the inspection of so many of Nature's gems, and the intelligent skill which such meetings bring together. The collections of plants, and particularly Hyacinths, though less numerous than on some former occasions, particularly that of last year, were abundantly numerous and first-rate in quality, and afforded a most enjoyable feast of floral beauty to the perfect crush of the élite of Edinburgh and its environs which thronged the hall both afternoon and evening.

Before passing on to notice in detail the objects which were exhibited, we cannot refrain from expressing great regret that several of the leading nursery firms did not contribute a single object on this occasion. This, of course, told to some extent on the general appearance of the Exhibition, although the more than usual excellence and number of objects contributed by private growers, and one or two of the Edinburgh firms, fortunately

served to make up for the absence of those whose interest we would suppose it was to contribute on such occasions. There was nothing from the gigantic concern of the Messrs. Lawson, of Golden Acres, nothing from the Messrs. Dickson & Sons, next to nothing from Mr. Methven, of Leith Walk. Surely this is not to be their rule on future occasions, as none we conceive have more inducement to contribute to the prosperity of a horticultural society, nor more interest in fostering and fanning the love of flowers and fruits. Nothing but emulation and the exciting influence of competition could have brought gardening to its high state of perfection: withdraw this influence, and we would venture to predict a speedy flagging of the pace of improvement. Nor is this principle by any means confined to the science of culture; it is alike applicable to the existence, health, and vigorous action of societies. Let us hope that these great nursery establishments will in future see matters to be as we have indicated, and that our next Show at the same place will be favoured with their aid to a liberal extent.

Messrs. Carstairs & Sons contributed a unique collection of flowering-plants such as they grow for sale, which occupied the whole of a table which stretched entirely across one end of the large hall. It consisted chiefly of forced Geraniums, Azaleas, Cytisus, Camellias, Lily of the Valley (exceedingly well grown), Fairy Roses, Cinerarias, Kalmias, a large number of well-grown Hyacinths, and other bulbous plants, some half-dozen very chastely got-up bridal and hand bouquets. Altogether this was a most creditable collection, and had a fine effect at the end of

the hall, and well deserved the special award which it received from the Judges.

Messrs. Downie, Laird & Laing also had a very handsome table of plants, among which were conspicuous the beautiful *Caladium Lowii*, evidently the best of its class, Ferns, Lycopods, Hyacinths, Begonias, Marantas, some large pyramids of Azaleas (one of them that most beautiful white variety, Mary), and Dracenas, Cinerarias, and two specimens in a pot of the lovely and most useful decorative plant *Centaurea ragusina*. To this collection a special award was also given.

Messrs. Cunningham & Fraser also received a special award for a collection of beautiful Amaryllids, among which we noticed *Linnæi*, *Vittata major*, *Imantophyllum miniatum*, *Ackermanii*, *Solandraeflora*. The Amaryllis is a plant well worth far more attention than it has yet received as a winter and spring flowering bulb.

Mr. C. Alexander, of Larkfield Nurseries, contributed a table of beautiful Ferns in excellent condition for March. Mr. Methven had two large plants of *Dicksonia antarctica*, or tree Fern, which had an imposing effect—standing prominently above the other plants. We hope next season he will contribute some of the splendid Azaleas and *Rhododendrons* for which his establishment is celebrated.

Among new plants, by far the most striking was the lovely seedling *Rhododendron* Countess of Haddington, exhibited by Mr. Lees, Tynningham Gardens. This is a real gem, being a cross between *Ciliatum* and *Dalhousie*, and having the stiff compact habit of the former with a vastly superior foliage, and the sweetness and beauty of the latter. For spring decoration this must prove one of the very best things recently raised. It was awarded a special prize.

There was a quantity of seedling Cinerarias exhibited by Mr. M'Millan, gardener to J. Gibson, Esq., Woolmet, all very pretty, but not equal to varieties already in cultivation. Mr. Cumming, Newbyth, had also a lot of seedlings of this popular spring flower. One white variety among them was commended by the Judges for its dwarf and compact style of growth.

For the twelve finest Hyacinths—Gardeners and Amateurs—(we are sorry to say there were no competitors for the prizes offered to nurserymen), Mr. Reid, Grange Cemetery, was placed first with fine plants of *Seraphina*, *Miss Nightingale*, *Baron von Tuyl*, *Von Schiller*, *Charles Dickens*, *Grandeur à Merveille*, *Madame Hodgson*, *Mimosa*, *Mrs. B. Stowe*, *Alba Superbissima*, *Monsieur de Feasch*, *Robinson*. Mr. Henderson, Millbank, made an excellent second. His collection contained different from that of Mr. Reid's—*Lord Palmerston*, *Mont Blanc*, *Queen Victoria*, *Lord Wellington*, *General Havelock*, *Macauley*, *Grand Lilas*. Mr. Vair, Gogar Bank, was third with such a collection as made it difficult for the Judges to decide the question.

For the best six.—Mr. Brunton, Duncleffe, was first with *Von Schiller*, *Alba Superbissima*, *Miss Nightingale*, *Prince Albert*, and *Lord Wellington*. Mr. Bery, of Newington was second; and Mr. James Watt, Broughton Park, third, with very good specimens.

Best six Hyacinths (Amateurs).—First, Mr. M'Phail, Athole Crescent; second, Mr. Young, South Bridge.

Best six Hyacinths in glasses (Amateurs).—First, Mr. Young; second, Mr. M'Phail.

Best six Hyacinths in glasses (Ladies).—Mrs. Nelson, Salisbury House.

Best single Hyacinth in the room.—Mr. J. Vair, Gogar Bank. The best double, Mr. Henderson, Millbank.

Four pots *Narcissus*, four pots *Tulips*, four pots *Crocus* (equal).—Mr. Vair, Gogar Bank; and Mr. Henderson, Millbank. Both these collections were exceedingly well got up, and formed a very attractive feature of the Show.

Twelve finest pots hardy spring bulbs.—Messrs. Cunningham and Fraser, Comely Bank Nurseries.

Twelve finest *Rhododendrons*.—First, Messrs. Cunningham and Fraser; second, Messrs. Dickson & Co. In these collections we noticed fine specimens of *Grand Arab*, *Pasithea*, *Prince Camille de Rohan*, *Jacksonii*, *Atrorubrum*, *Dalhousie*, *Etendard de Flandre*.

The finest scarlet *Rhododendron*.—Mr. Henderson, Millbank. The finest white *Rhododendron*.—First, Mr. Henderson, Millbank; second, Mr. Lockhart, Arniston.

Two Azaleas Indica.—First Mr. Henderson, Millbank, with two unique plants of *Iveryana* and *Criterion*. To the best of our recollection Mr. Henderson has taken first prize with not only these two varieties, but these two very plants for the last four

years, and this shows how certain a cultivator he is. Mr. Lockhart, Arniston, was placed second with well-managed plants, *Roi Leopoldii* and *Iveryana*.

Two finest *Epacris*.—A second prize was awarded to Mr. Fowler, Mavisbank.

For Cape Heaths there was no competition.

Three finest Cinerarias.—First, Mr. Henderson, Millbank, for Duke of Cambridge, Constance, and Glory of Dulwich; second, Mr. M'Millan, Woolmet, for Blue Bonnet, Brilliant, and an unnamed seedling.

Two finest greenhouse or stove plants.—First, Mr. Lockhart, Arniston, for *Erica Sindriana*, and *Pultenaea subumbulata*; second, Mr. Henderson, for *Acacia Drummondii*, and Azalea *Empress Eugénie*.

Six *Camellia* blooms.—First, Mr. Henderson, with very fine blooms of *Candidissima* *Halleyi*, *Abbey Wilder*, *Elata*, *Maria Theresa*, *Duchess of Buccleuch*; second, Mr. Lockhart.

The best Table Bouquet.—First, Mr. M'Millan, gardener to J. Gibson, Esq., Woolmet; second, Mr. J. Gordon, Niddrie.

Best Hand Bouquet (Nurserymen).—First, Mr. John Fraser, Rosebank; second, Mr. C. Alexander, Larkfield Nursery.

Best Hand Bouquet (Gardeners).—First, Mr. Henderson, Millbank; second, Mr. M'Millan, Woolmet.

Two best plants *Mignonette*.—First, Mr. M'Millan, Woolmet; second, Mr. Lockhart, Arniston.

Three best pots *Lily of the Valley*, three best pots *Violets*.—Mr. Reid, Newhailes.

Three best forced *Roses*.—First, Mr. Gordon, Niddrie, for *Gloire de Dijon*, *Géant des Batailles*, and *Coupe d'Hébé*.

Two best single *Primulas*.—First, Mr. Fowler, Mavisbank. A special award was made to two exceedingly well-grown white *Primulas* from Mr. Henderson, Millbank, which were disqualified from competition on account of their being both white, instead of one red and one white, as specified in schedule.

Four *Azalea Indica*.—First, Mr. Lockhart, Arniston, with good plants of *Magnificans*, *Fildertii*, *Stanleyana*, and *Symmetry*—all first-class varieties.

Twelve plants for table decoration.—First, Mr. Thomson, Dalkeith Park, with fine plants of *Cordylina indivisa*, *Pteris umbrosa*, *Grevillea robusta*, *Adiantum formosum*, *Colens Verschaffeltii*, two *Dracena terminalis*, two *Croton angustifolium*, two *Dracena ferrea*, and *Yucca variegata*; second, Mr. Fowler, Mavisbank, with three Azaleas, two *Ardisia crenulata*, two *Epacris*, one *Acacia Drummondii*, *Dendrobium nobile*, a *Pultenæa*, and a *Cineraria*.

Six finest *Azalea Indica*.—First, Messrs. Downie, Laird and Laing.

FRUIT.

The finest bunch of Grapes.—First, Mr. Thomson, Dalkeith, with a handsome and well-preserved bunch of *Lady Downe's*. Mr. Lockhart, Arniston, made a capital second with a fine bunch of the same variety, which had been cut from the Vine for fourteen days.

An enormous bunch of *Raisin de Calabre* was exhibited from Dalkeith. It weighed $4\frac{1}{2}$ lbs., and was without a shrivelled berry. This is one of the most valuable late-keeping Grapes in cultivation, and is the best white partner for *Lady Downe's* in spring yet out.

For the best thirty-two Strawberries, Mr. Gordon got a first prize.

From Archerfield Gardens there was a *Pine Apple* of the *Hurst House* Seedling not quite ripe, in an eight-inch pot. This variety is remarkable for its compact dwarf growth, and the large fruit that it throws in a small pot. A first prize was awarded to Mr. Thomson, Archerfield, for a moderate-sized fruit of the same variety.

VEGETABLES.

For the finest collection of vegetables, Mr. Gordon, Niddrie, was placed first. His collection had Asparagus, French Beans, Mushrooms, Sea-kale, &c. Second, Mr. Thomson, Woodburn.

Twelve heaviest stalks *Rhubarb*.—First, Mr. Vair, Dulock; second, Mr. S. Dickson, Whitehill.

Six finest heads *Sea-kale*.—First, Mr. Gourlay, Musselburgh; second, Mr. Fowler, Mavisbank.

Three *Broccoli*.—First, Mr. Scarlett, Rosebank; second, Mr. Gordon, Niddrie.

Six *Leeks*.—First, Mr. Fairley, Henderson Row; second, Mr. Thomson, Woodburn.

Finest *Pint Mushrooms*.—Mr. Pender, Moredun.

BEEES IN MY ORCHARD-HOUSE.

Sunday, March 22.—What a glorious sunny day! How filled is the air with the harmony of birds! The blackbird, the thrush, the chaffinch, and, above all, the lark, are pouring forth their thanks for this foretaste of spring. Well, as is my custom after morning service, I strolled into my orchard-house, and to my surprise—for, since the winter of 1860 which destroyed all the bees in this neighbourhood, so that I am not cognisant of a single hive—I found it literally full of bees, every tree loaded with its glowing blossom had from ten to twenty of these sabbath-working little fellows all busy in apparently gathering nothing but pollen, although, I dare say, they now and then stole a sip of nectar. As soon as two large lumps of the golden dust were glued to their thighs they took their departure home—heaven knows where, and then came every minute fresh arrivals to join in the loud hum of happiness and content. I almost fancied they thanked me for giving them such an early feast; and, then, how fearless they are, alighting on a flower close to one's eye, and allowing one to watch every movement without betraying the least feeling of anger or discomposure. There is something in all this very charming, the stillness of the Sabbath thus agreeably broken by the pleasing sounds of bird and insect life.

That I am not alone in my train of thought, allow me to illustrate by quoting from a note just received from one who is at the head of the scientific world, one whose mind is so gigantic in its grasp as to be able to people the world of countless ages past with its inhabitants. May I, therefore, trespass so far as to give an extract from the note in question?—"I have been sitting in my orchard-house surrounded by the loveliest bloom, with the sun shining warm at my back, amidst the hum of bees. One hour of enjoyment of such precocious summer repays the whole year's care. To ears wearied with the din of town, to other senses offended with its fog and fumes, to the mind jarred by the inevitable conditions of official responsibilities and intellectual struggles, you may conceive the paradise of such a contrast as I am now enjoying. A Sabbath peace, broken by the pleasing songs of happy birds, and the distant call of the rook; all the worlding's world shut out. But you cannot appreciate the scene without seeing it; and the full enjoyment of my garden will be wanting until you have an afternoon with me in it."

Such are the reflections of a man of high intellect—how different from those of the prize-looking-for gardener!

I begin to think that orchard-houses are far more adapted to the refined and philosophical, than to those who calculate how many fruit each tree will produce, and if they will be able to "show" at some horticultural exhibition. What lover of his trees could bear to strip them to make-up "dishes" of fruit, or send his beautiful trees, loaded with their fair produce, some miles at the risk of every leaf and fruit being bruised, and the beauty of the tree destroyed? No amateur or real lover of gardening would risk this. I have sometimes been half tempted to send two or three of my finest trees, merely to silence those detractors and persons of confined ideas who think everything worthy of being seen should be exhibited; but I have never had the courage, feeling assured that a fine tree of fruit must be destroyed, however carefully packed, during a journey of sixty miles. Exhibiting gardeners know little of the feelings of the real lover of orchard-house culture, who enjoys his house nearly at all seasons; but if there be any difference in the measure of his enjoyment it is in spring, when the trees are in full bloom; and he looks at them, not as he looks at his wall trees, with a mixture of hope and fear—the latter largely predominating—but with a calm, delightful, confident feeling that nearly every flower will produce a fruit, and that the only trouble he looks forward to is thinning it. The climate, also, of the orchard-house, irrespective of the fruit it gives and ripens, is a source of great pleasure. I often hear from friends, who are victims to pulmonary disease, expressing the pleasure they derive from the climate of their orchard-houses. It is, indeed, at all seasons—except in bitter dark weather, when there is not a gleam of sunshine for days—perfect. In the bright sunny weather we have had for some days past, the thermometer has stood at 72° in my large house, but the ventilators at a low level, admitting two large volumes of air, made the climate like that described by the Persian poet—"The warmth was not heat;" and, I may add, in cool weather, "Its coolness is not cold." Think of this, Mr. Robson, and repent.

March 27th.—I have just paid my morning visit to my orchard-house. The trees never were more magnificent. The most striking are those with large flowers, and first among them

are the Orange Nectarines, the Pitmaston and Rivers's Orange; the latter has the largest flowers and is really gorgeous. Next to these are the varieties of Grosse Mignonne Peaches, all bright and beautiful. Then we have the Shanghai, Montagne Précocée, Early Victoria, and Early York Peaches, and the Hardwicke Seedling, and Early Newington Nectarines, all with large and showy flowers. Among those with small flowers there are some varieties almost petalless, or apetalous, to use the botanical term: the Petite Mignonne Peach is remarkable for this. Others have small petals so bright and pretty that one is always arrested by them. Such are Impératrice, Downton, Violette Hâtive, and Elruge Nectarines, and the Violette Hâtive Peach. Besides these there are many intermediate flowers, scarcely two alike in the orchard-house, unless of the same variety. The effect may be imagined when I state, that there are more than four hundred trees, three hundred of which are Peaches and Nectarines, in my house in full bloom.

Pears, Cherries, and Plums with their pearly blossoms contrast so beautifully with the bright pink of the Peaches and Nectarines, as to make the picture perfect. My largest trees are now from ten to fourteen years old; and although their roots, to use Mr. Robson's phrase, are "cramped in pots" (oh! Mr. R., they are in the most perfect and vigorous health), the Apricots are all off bloom, and have set their fruit so thickly as nearly to hide the leaf-buds. I counted seven fruit in a square inch of space, and yet such men as our nonprogressive friends, Jasper Standstill and Peter Heavyhead, say that Apricots are difficult to cultivate as house trees. I cannot help saying "pooh."

I am fearful our friend Mr. Robson will feel a little nervous irritation in seeing this, to him, disagreeable words "orchard-house," at the head of this article.—T. R.

WORK FOR THE WEEK.

KITCHEN GARDEN.

AFTER the favourable weather for out-door operations which we have lately experienced, all kinds of work here should be in a forward state. Take advantage of the dry condition of the ground to get manure wheeled upon quarters where it is wanted, and to push forward any jobs which may involve wheeling. *Beans*, earth-up growing crops, and continue sowing for succession. *Broccoli*, sow for a main crop. *Cabbage*, sow for a main autumn crop. Fork up the earth between those planted in the autumn. *Capsicums*, pot-off as soon as they are fit. *Cauli-flowers*, stir the soil round those under hand-lights, and earth them up. Sow for autumn crop if not already done. *Cardoons*, sow seed if that vegetable is esteemed. *Celery*, prick-out the early crop. *Potatoes*, plant the main crop. *Spinach*, sow small crops of the Round in drills, but little at a time, as it soon runs to seed. *Tomatoes*, these should now be potted-off. Sow seeds of herbs and other vegetables that may have been omitted during former weeks. Remove all litter and weeds. Earth-up early crops, strewing a little soot or fresh lime about them to prevent the attacks of slugs. Protect recently-sown seeds from birds by a covering of nets, or by twine stretched over the rows or beds, with pieces of glass suspended from it in a manner to clash with the wind and to flash with the sun.

FLOWER GARDEN.

All nature is now starting vigorously into life; and, however delighted we may be by looking on the productions of genius, no art can inflame our sensibilities like the glow we feel coming over us on viewing the universal mind of the Great Designer unfolding itself in every leaf and flower; and, instead of the sigh of despondency coming over us, we should feel that this is a season of the year to be joyful, and to be ready at all times to respond to all the animate and inanimate expressions of nature about us. Prosecute vigorously, till finished, improvements in this department. Bring speedily to a close the laying-down of turf and the planting of deciduous and evergreen shrubs. Make a sowing of all the showy hardy annuals in the flower garden and shrubbery borders. Pay due attention in sowing to the heights and the arrangement of colours. Gravel put on walks, especially if sloping, should be almost in a state of mortar prepared for use; well trodden and afterwards rolled, it forms a hard and durable walk. To keep Ivy close to a building, it is advisable to defoliate it about this time, and it will soon again be covered with fresh and vigorous leaves. Continue to put in cuttings of those choice

varieties of Dahlias of which it is desirable to have a good stock. Sow choice Ranunculus seed in shallow pans or boxes; cover the seed as lightly as possible, and place them in a cool frame. This is a good time to strike cuttings of Fancies; put them in round the sides of small pots, plunge in sand on a north border and cover with a hand-glass.

FRUIT GARDEN.

The season for disbudding fruit trees is fast approaching. The importance of this operation is generally acknowledged, and upon its proper performance mainly depends the production of a proper quantity of clean healthy wood of the best quality. Every tree in a good soil is capable of producing and bringing to perfection that quantity of wood and number of fruit which is proportionate to its age and the healthy condition of its roots: consequently, if by carefully thinning the fruit, and removal of superfluous shoots, the fluid is directed to all parts of the tree at nearly equal distances, the result will be that each shoot will have the power of drawing to itself that amount of sap which is necessary for its healthy support. Employ all available means of affording efficient protection to early wall trees. Whatever material be employed it should be devised that it may be speedily removed at will, to allow the trees the advantage of fine weather.

STOVE.

Here at this time much is to be done in the way of timely potting, and applying weak manure water to those plants now making their growth and filling their pots with roots. Shut-up a high temperature rather early in the afternoon, and use the syringe liberally.

GREENHOUSE AND CONSERVATORY.

The great proportion of greenhouse plants are now in activity, and very much depends on the treatment they receive at this time. The practice of dwarfing trees, shrubs, &c., which the Chinese pursue with such assiduity, is diametrically opposed to our method, which generally consists in developing things to their utmost power of expansion; yet, admitting the absurdity of a fashion that would strive against Nature, we might, nevertheless, profit by a lesson from them when, restricted in space, we are yet compelled to retain a certain number of decorative greenhouse plants, which, if permitted to increase in size, would occupy an unfair proportion of the plant-house. It becomes then necessary to adopt the Chinaman's custom, and restrict those circumstances that conduce to luxuriant growth; and in some cases, still following his practice, use the pruning-knife to both branch and root, to adapt the unfortunate subject to the limited accommodation. This is a trying period for the conservatory inmates, at least for those of delicate habit, and a slight shading may not be amiss for an hour or two on very sunny days. See that twiners which are starting into growth are kept free from insects, as these, if allowed to gain a footing upon the young tender shoots, will soon do a vast amount of mischief. Large plants of *Brugmansia* that have been kept dry and resting through the winter should now be pruned back, shaken out and repotted in readiness to be turned out of doors in a sheltered situation, where they form beautiful objects in the late summer and autumn months.

PITS AND FRAMES.

At this period it is of much importance to have a dung-bed or two of a very moderate character fitted-up for the purpose of cooling-down fresh-struck cuttings, hardening annuals, and receiving plants from either the stove or the greenhouse; for, in consequence of liberal shifts in these departments, and the rapidly increasing size of *Cinerarias*, *Pelargoniums*, &c., something will of necessity have to be removed, and a cold frame is insufficient for some of these tribes. Look well to the propagation of bedding-out plants. See that such climbers as *Rhodochiton*, *Maurandya*, *Lophospermum*, *Tropæolums*, &c., are propagated and cultivated for blanks or trellising, &c. W. KEANE.

DOINGS OF THE LAST WEEK.

AND such a glorious week for March dust, which the old proverb tells us is more valuable than gold dust to the community, and more valuable even to the agriculturist than to the gardener, as the farmer gets in now the greater part of his seeds for the season, whilst the gardener must sow only a little bit of many things at a time, to keep up a continuous fresh supply. Of course, there is a main crop of Onions to be sown, and the

weather was so tempting that we sowed a good portion of them, and a first instalment of Carrots, and just a little bit of Beetroot to come in early. Where young Onions are a desideratum there must, as with us, be a sowing at least every month during the summer, and young Carrots are so much sweeter and so much less likely to be affected by the worm, that several sowings up to June, and again a few Early Horns in September, will enable the gardener to keep on better terms with the cook, just because of the reaction of commendations of everything being "so nice" from the dining-room. April is generally early enough for Carrots, and the end of April quite time enough for Beetroot, Salsafy, &c., but a few heads of forward Beet are useful, even should a part of it run. Threw a little lime and soot over the Carrot and Onion ground, to keep worms and slugs at a distance. Placed spruce boughs, from which the leaves had fallen, over rows of Peas, which partridges and other birds seemed resolved should not get above the ground. If that does not stop them, must place narrow bands of netting over them. Singular enough, the kinds molested are fine Marrows; as yet the birds have let Frames and Dickson's Favourite alone, so, perhaps, there may be as much difference in the foliage as in the Peas. When staked, and a few bushy twigs stuck along the bottom on each side of the rows, the birds generally let them alone until they are fit for the table. Gave a good watering with manure water to Cauliflowers under hand-lights, and gave them an earthing-up. Watered those also planted out in the open air. Pricked-out Cauliflowers and Lettuces that were scattered on the surface of an early Carrot-bed under glass. Sowed more *Kidney Beans*. Looked over those bearing frequently, so that no pod should become too old, as that would be double waste; the pods being useless, and one such pod exhausting the plant more than four or half a dozen when in a nice young state. Syringed in the afternoon with clear soot water, to keep all trace of the thrips, &c., at a distance, this water being as much disliked by the vermin as it is relished by the plants. Removed Potatoes in pots under a little protection, turning them carefully out of the pots, and setting the balls in leaf mould, as a number will yet be produced, and the first bed will soon be fit for use. Hoed and raked Asparagus and *Sea-kale* beds, and threw a dusting of salt over them. As the latter is now coming strong, put two or three dozen of pots over a part, and a piece of turf over the hole in the top, and a little earth round the bottom to keep out light, and a few armfuls of dry litter over the pots; for if a sharp frost come, and the pots be exposed entirely, and the *Sea-kale* 4 inches high, and close to the sides of the pot, it would be much injured, although it would take no harm if fully exposed.

Planted out the remainder of winter Onions. We never do much with them when we leave them where sown in September, they always bulb better for the transplanting. Also, did the same with small sets of Shallots and Garlic, though in most grounds we prefer autumn planting, though they do well with us even after this time. Cleared off a quarter of Cabbage stalks, and laid out the grounds into beds 4 feet wide, with ridges between, and put several inches of half-rotten leaves in the trenches for want of better, which will come in ultimately for Celery, and in a few days will be used in the meantime for turning out great numbers of bedding plants. Pricked out Celery into pots and boxes, and sowed for succession in a mild heat. Planted out a second lot of Cucumbers. Removed the litter and earth from *Globe Artichokes*, and after removing some sucker-roots for a fresh row, will dung and fork the ground round them. This winter we expect none will be injured by the frost; but, nevertheless, we range ourselves among the protectors. We do not make much of a job of it, however; merely place some long litter round the plants somewhat tightly, and then throw some spadefuls of earth from between the rows on, and among the litter to keep it from blowing about, and then fork over the surface of the ground. If the frost should prove very intense, a barrowload or two of litter thrown over the ground will prevent the ground being much frozen. The mere forking of the ground lessens the danger from damping. Sowed in shallow drills the main crop of Parsley out of doors; also, Chervil and several kinds of herbs—as Borage, Burnet, Caraway, and some others sowed in boxes under protection, as Thyme, as the ground was rather rough for such small seeds. Sowed also in rows, 2 feet apart, a good piece of *Sea-kale* and Asparagus on a north border for want of a better. In such a place the *Sea-kale* will be strong in two years, and the Asparagus will be transplanted. Threw charred-heap-and-ashes-material over Radishes, Turnips, &c.,

and fresh planted Cabbages. Sowed a few Broccoli, Savoys, Scotch Cabbaging-kale, Brussels Sprouts, &c., to come in early, deferring the main sowing for a fortnight or three weeks to come. Gave mature waterings to Broccoli plants coming on strongly and well, there having been no frost to hurt them but what could be easily guarded against. Was obliged to remove lots of Lettuces and Endive from earth pits, as their room was wanted for bedding plants.

FRUIT GARDEN.

Here routine attention to watering, air-giving, and firing, and moving *Strawberry plants* and getting others in have been the principal work. The front of the Peach-house being cleared of early Peas in pots, which were transferred to the orchard-house, a shelf has been elevated all the way on pots; and saucers being deficient, and, besides, requiring careful management, the shelf has been covered neatly with an inch of moss, with about half an inch of riddled leaf mould and old mushroom dung on the top of the moss, and all well watered with strong, hot lime water to settle any small snails, &c., that might be in such materials, and on the top of this covering the Strawberry pots after being cleaned were placed. We have long found such a plan in places where a little drip after watering is no object, preferable to using saucers. The moss retains moisture a long time, and yet if the drainage is nearly right, there is no danger of water-logging the plant. The fine weather has made Strawberries really worth eating. As our late vinery gets cleared of plants, we shall introduce many Strawberries in the same manner, and orchard-houses too will get their share.

ORNAMENTAL DEPARTMENT.

For stove plants and Orchids, see the excellent directions of our old friend Mr. Keane. All terrestrial Orchids and stove plants in general that now require shifting will be greatly improved by bottom heat. In fact, where this can be applied, much less atmospheric heat will be necessary. This bottom heat, where it can be given, is a grand promoter of sturdy growth both in-doors and out of doors. Many tropical plants will do well out of doors in summer if only extra heat and manure can be placed beneath them. Occasionally we meet with fine specimens thus managed, but most of us find fermenting material so scarce that we can spare little or none for such purposes. In cold places, even Cucumbers and Vegetable Marrows out of doors in summer do much better if they are planted on a mound of fermenting material. Many fine-leaved plants from the tropics and more temperate latitudes south of ours would do well if holes a yard in diameter were dug out, from 2½ to 3 feet deep, filled more than half with hot dung well worked and then good earth put in, 6 inches higher than the surface, to allow for sinking. Even such hardy plants as *Brugmansias* will produce magnificent flowers and foliage from this treatment.

Cut down and repotted the flowering Begonias. Now is a good time to put in cuttings of *Clerodendrons* for next season; also cuttings of Begonia fuchsoides for blooming in winter and spring. Small plants a foot or so high should also be repotted and encouraged to grow on for a similar purpose. Large plants with masses of drooping flowers look very graceful. Care should now be taken that *Ixoras* and plants of that tribe should not have too much bottom heat, and be watched for any appearance of fly and thrips. Such plants should have a fair amount of air in these sunny days, and be syringed and shut up early in the afternoons, as sun heat is more healthy at all times than fire heat. Ferns must have plenty of shade. Potted more fine-leaved Begonias and *Gloxinias*, and placed them beneath the shade of the Vines. Repotted large *Fuchsias*. Sowed lots of tender annuals also under the shade of Vines, and will remove them as soon as they are up, so that they may have more light.

Pricked-off *Lobelias* and plants of that kind. Just now I wish every pair of hands could be multiplied threefold, as we are rather behind with some kinds of work. Few know before they try it what it is to fill large flower-gardens in the present fashion, and have little or nothing but your plant-houses to depend on as means. The great aim should be to put all bedding plants out before they become drawn or enervated. We inadvertently kept some *Bijou Geraniums* too long last season, and, but for their foliage, they took until September to recover themselves. Removed *Pelargoniums* from second vinery as it was getting too hot for them. These are at present in the cool vinery, and will soon go to the conservatory. That cool vinery—though with fruit until March and filled every inch with plants above and below, and with air on night and day,

except in frost—is now beginning to move, though the place over the Vines is shaded. We are thinning this house as quickly as we can by taking young *Geranium plants* that were standing thickly as they were struck in boxes and planting them out in earth pits, to be protected temporarily. We like to turn them out in compost consisting chiefly of leaf mould, but we are too deficient of that material to do so. Success greatly depends on shallow planting. For this purpose, the ground being rather firm, the surface soil is forked over from 2 to 3 inches deep, allowed to dry, and rough raked. Then a board is obtained, the size of the width of the pit, for standing on, and a shallow trench about 2½ inches deep taken out, a little rough fresh stuff of leaf mould hot, burnt charred heap and fresh loam, is thrown upon it, and the plants are placed along, some 3 or 4 inches apart, according to their size. A little more of this fresh rough material is thrown along and then fastened round the roots of each plant. The plants are then watered with warm water and the surface dry soil is then put over them, patted down slightly with the spade, and the next trench taken out 4 or 5 inches from the first, according to the size of the young plants. In sunny days these plants will have the foliage damped from the syringe, and anything worthy of the name of watering will not be given until a short time before bed-filling time. The chief object is to plant and keep the roots near the surface; for if they go down, when lifted they will flag considerably in the beds. From thus never potting we save a great amount of labour, and chiefly in watering. The earth pits filled with *Calceolarias* are syringed also in the middle of these sunny days, and they are doing nicely. In a brick pit, with glass over them and a few warmish leaves below, we have planted out temporarily *Amplexicaulis Calceolaria*, as that is more tender than most; and also lots of *Ageratum*, which we want strong for rows. Cuttings of that also must be put in. Planted lots of cuttings of the *Cineraria maritima*, in a strong heat. The cuttings slipped off from the base averaged 1½ inch in length, and these tiny bits will make better edgings in May than old plants or cuttings made last autumn. We shall plant out lots of *Verbenas* directly in temporary beds, and put in a fresh batch of cuttings of some of the more distinct colours.

Our readers may recollect of our filling a couple of two-light frames with *Calceolaria* cuttings, having a little heat below them. We do not believe one will miss, but we are put out so that very few are yet rooted and we want the frames for other purposes; and we suppose we must wait a week or ten days more, when a few branches will shelter them sufficiently. No one looking on them cursorily could detect any reason why they are not already rooted. All seem nice and firm at the top; but, on closer investigation, we find that the bottom of the cuttings is somewhat "hung"—that is, the earth and sand had not been pressed close enough to them, except at the surface, and that will make a week or ten days' difference in the time of rooting. We thought of this when our worthy coadjutor, Mr. Beaton, described Mrs. Bird's plan of dropping the cuttings into the holes. In such case there must be plenty of sand, more than we could spare, to wash down by the sides of the cutting, or part of the base may swing in a vacuum, as we find many of these of our spring-put-in ones do. This just shows the importance of minutiae. We do hope that our friend Mr. Beaton will soon be able to be among us, as few, like him, possess the power, with a mere sweep of the pen, of establishing a new idea or perpetuating a useful practice.—R. F.

TRADE CATALOGUES RECEIVED.

J. Salter, Versailles Nursery, Hammersmith Gate, London.—*Descriptive Catalogue of Chrysanthemums, Dahlias, Pæonies, Phloxes, Hardy Variegated Plants, &c. Spring, 1863.*

Bruce & Co., Hamilton, Canada West.—*Descriptive Catalogue of Flower, Kitchen Garden, and Farm Seeds, Bulbs, &c. 1863.*

TO CORRESPONDENTS.

CINERARIA SEEDLING (*H. A. C.*).—The *Cineraria* is of no value, and not unusual in colour. *Cinerarias* are not injured by tobacco fumigation if practised with the usual care. All the flowers you mention may be benefited by weak liquid manure of fowls' dung. One peck to thirty gallons of water would be enough, and not applied oftener than once a-week, nor until after the flower-buds appear.

MAKING A FEERNERY (*G. E. R.*).—Apply to Messrs. Veitch & Son, King's Road, Chelsea. They could send you a man to construct it. You do not say where you live, and we are not clairvoyant.

FLUES (Querist).—We do not know Mr. Ayres' address. He has long left the place you name, and the work mentioned is extinct.

INSECTS ON PLANTS IN VINERY (P. C. D.).—We discovered no insects on the leaf sent, but we saw marks that left no doubt on our minds that you have the thrips. The best remedy you can employ at present is smoking, and that repeatedly, as you cannot wash with the Vines in bloom. The next best—nay, the first best—is to take a small brush and a dish of soap water and go over the leaves of the Vines, and every little jumping or sleeping thrips you see daub him up with the soft moist brush. You would soon thus go over the house, and several catchings would clear the whole. If this is too tedious you must smoke several times, and then, when the fruit is fairly set, you may wash with clear Gishurst, at the strength of about one ounce to two gallons, dissolved the day before, and then gently poured off so as to have the liquor pure and without grounds. This you must repeat often. If you have a boy with a quick pair of eyes, the brush moistened with soap-water will be the best and most effectual remedy. Now, one word as to bedding plants in a vinery. They will do no harm when the Vines are at rest. Your house must now average 65°, and that will ruin the most of bedding plants. We were lately accused as the cause of Calceolarias being a living mass of all sorts of insects, from saying they might be kept in such houses; but no one who has read "Doings of the Last Week" but must have seen that all such plants must be removed before the temperature is much raised. Of all bedding plants Geraniums will stand most heat, especially if they have plenty of light. Without that light all the extra growth from extra heat will be more than neutralised, from their inability to bear the brims of the open air afterwards. Through excess of work, some variegated Geraniums were left too long in a vinery last spring, but they never got over it until September.

LAWN WITH MOSS AND SPIRY HARD GRASS (A Subscriber).—A mossy lawn ought to be harrowed or scratched over with a rake in spring, and slightly dressed with some fine good soil, which might be sifted, perhaps, to remove all stones, and a quantity of grass seeds mixed in the soil, it might then be spread over the lawn and rolled in. A little wood-ashes or lime is also useful to kill the moss. The hard wiry Grass is, however, more difficult to manage; but this generally succumbs to continued cutting, the finer Grasses enduring that ideal better. Most likely, however, the hard wiry Grass is on the poor land, and it may be treated the same way as that which is mossy. Lawns affected with worm casts are more difficult to manage. Watering with lime-water will keep them down for a short time only, but it is a tedious and expensive mode. Thus some take the trouble to take up their turf and put an inch or two of cinder ashes or lime-siftings underneath it. The richest grounds are most infested with worms. Weak gas-water will drive them away, but they return again if the weather be mild.

COLOURS OF BEDDING CALCEOLARIAS AND VERBENAS (A Tyro).—The Calceolarias you mention are *Kentish Hero*, orange buff; *Viscissima*, yellow; and *Sultan*, crimson. The Verbenas are *Prince of Wales*, crimson, yellow eye; *André*, purple; *St. Margaret*, light crimson; *Mrs. Cayley*, white, purple eye; and *Parfum Madeline*, white, violet eye.

QUANTITY OF COCOA-NUT FIBRE DUST REQUIRED AS A MANURE (C. S.).—“A rod (imperial), pole, or perch, or 30.25 square yards, will require one bag or three bushels of cocoa-nut fibre dust. The dust must not be scattered broadcast, but in the rows immediately over the sets; for its properties are not so stimulating as guano or farmyard manure, evidently not being so surcharged with ammonia (nitrogen); but it (the dust), yields nitrogen by the process of decomposition as in the case of all decaying vegetable substances, slowly but surely. Its advantage over manure seems to be due to that continual yield of nutrition being as abundant when the plant is developing as when it is sprouting; whereas in manure it is richer when the plant least needs nourishment.—G. A.”

GRUBS IN FLOWER-POTS (A. T.).—The grubs sent to us were the larvae either of *Elbio Marci* or *Dilophus febrilis*, two-winged heavy-flying insects of a shining black or red colour. We have generally considered the grubs feed on decaying vegetable matter; but they will doubtless also feed on the fine rootlets of plants, which should be repotted into earth which has been baked.—W.

FLOWER-GARDEN PLANS (M. C. E.).—We have no doubt that No. 1 will look very well, but we prefer No. 2, and we would not mix the edgings at all as you propose; but on all except the four narrow beds at the ends we would have a broad edging of 12 or 15 inches round each bed, and these should be all pretty level throughout, centre and edgings. Then suppose you edged 3 and 4 with blue Lobelia, we would edge 1 and 2 with variegated Alyssum. Then we would cross the others—as 5, 8, Ageratum, with borders of Tropaeolum, yellow, well diseased; 6, 7, yellow Calceolarias, band of Purple King Verbenas, and edging of Cerastium if liked. Then cross 10, 11, and 9, 12, bordering all instead of mixing, and try this for the present year. The borders must be close up, joined to the centre, but kept in a straight line from it.

BULBS IN POTS (H. B.).—To make the most of bulbs done flowering, they should be kept at first under glass, and watered well so long as the leaves remain green, then placed in a sunny place and kept dry to ripen.

CAMELLIAS AND AZALEAS AFTER FLOWERING.—(Idem).—The Camellias and Azaleas may be kept close in the greenhouse, or removed to more heat, where they will form their wood and set their buds earlier.

SOWING CLIANTHUS DAMPIERI (Idem).—The seeds of *Clianthus* must not remain long in the hot water—say ten hours. We prefer doing so before sowing, and 130°, 140° or so instead of 100°, as when you steep earth and altogether, it is apt to make a quagmire of the soil.

CUCUMBERS DISEASED (A Constant Reader, Littlehampton).—We think it is likely they have taken “the disease,” but, perhaps, it is only a burning from deficient ventilation. Stir the surface of the soil, throw a slight sprinkling of soot on the surface, and if the back of your frame or pit is very white, dull it with a mixture of soot and sulphur made into a paint. Leave also a little air on all night.

INDIAN SEEDS (T. B., Leeds).—They rarely are worth trying to cultivate. The Cape Gooseberry is *Physalis edulis*. The Marvel of Peru is *Mirabilis jalapa*, and is described in the Dictionary. The other species, perhaps, is *Mirabilis suaveolens*. The Giant Convolvulus may be *Convolvulus maximus*, a native of Ceylon. The other names are too indefinite to be identified.

ORCHARD-HOUSES (Inquirer).—The Harlow Station is the nearest to the Sawbridgeworth Na series, and we know that Mr. Rivers will admit you, or any one, to see his orchard-houses.

BURNING CLAY (Starkie Baldwin).—The clay will certainly be turned into a hard, red, lumpy substance like bricks; but we have always found that it was easily broken up into a brickdust material, which is just what is required to mix with and disintegrate a heavy soil.

MANURES (An Amateur, Surbiton).—How can we advise you without knowing the plants you are cultivating?

CLIMBER FOR GREENHOUSE WALL (J. B.).—The *Cobaea scandens* would grow very quick, but it is slightly herbaceous, though it would always be green. Perhaps as a mere cover or shade, *Cissampelos* or any other greenhouse *Cissus* would be best, as it runs closely and always presents a thickset of green.

SOWING DEODAR SEEDS (Sophia).—Split the Deodar cones and beat them a little and the seeds will drop out, or you may take them out. Sow in loam, slightly covered, and put in a cool place under glass.

COVERS OF OUR VOLUMES (Idem).—There is no difficulty in obtaining the covers through any bookseller. Their price is 1s. each.

FLOWER-GARDEN PLAN (Idem).—The colours are pretty well arranged. Such lists as you require have been often given. The other week you would see the planting of a flower-garden at Straffan—all low things. As your beds are only 3 feet across, we would prefer planting each bed of a colour. We think all these will do, except those to which we allude. The beauty of the picture will consist in having the plants about the same height. We therefore think *Perilla* will be tall for anything you have, unless you stamp it down well. For the same purpose the *Linum* will be too tall for a crimson, and the *Clarkia* would be more suitable. A crimson *Verbena* would be better still, and more lasting. For whites as in unison with *Saponarias*, you might use white *Clarkia* or white *Feverfew* pegged down; but the best would be white *Verbenas* or white *Alyssum*. For violet we fear the *Convolvulus* will be too rampant, and we would prefer such things as *Verbena Purple King* or *Charwoodii*, and for lilac such a *Verbena* as *pulchella*. At this season, however, we can only criticise the intended planting of our friends—we really cannot plant for them. The scarlet and yellow *Nasturtiums* must be well picked of leaves, or they will be too strong for the rest. We dislike the most brilliant colours being in the centre of such a group, and therefore your *Nemophila discoidalis* will do. We think you would improve your figure by having the central circle white, and as you have twelve clumps round it in six pairs, you could put a scarlet pair for violet. In the four clumps at the two corners you might put white where white is, and *vireo-vera*. The other week a list of annuals was given for a small garden.

PRIMULAS, &c. (Tyro).—Division of the plants and offsets are the modes of propagating Primulas; cuttings cannot be made of them. Tobacco paper can be bought at wholesale tobacconists, but shag tobacco we prefer for fumigating.

NAMES OF FRUIT (H. Pedley, Tenterden).—The Apple is evidently a seedling, and appears to be a good kitchen sort. The naming of it will rest with yourself. Being a good keeping Apple, it deserves to be cultivated.

NAMES OF PLANTS (E. A. S.).—It is useless to attempt naming Ferns in the seedling state, as are all those you have sent. They will alter entirely by the time they get matured. (*J. S.*)—*Dipsacus sylvestris*, or Wild Teasel. (*C. B., Knaresborough*).—It is *Daphne mezereum*, a native of England. (*F. N.*)—*Fabiana imbricata*. (*C. F.*)—*Omphalodes verna*. (*M. H. R.*)—1, *Platycodon alceiformis*; 2, *Adiantum formosum*; 3, *Adiantum cuneatum*; 4, *Selaginella uncinata*. (*M. B., Yorkshire*).—1, *Oncidium carthagenense*; 2, *O. luridum*; 3, *O. altissimum*, apparently; 4, *Dendrobium Pterid.*

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE POULTRY CLUB.

ALL associations of men for the purpose of assisting each other in harmless and useful pursuits deserve the support of their fellows, provided the grounds on which they start are sound. When, however, the object they have in view is unattainable, or appears so to some, it is the duty of these to make their notions public.

“Members to be expelled the Club at a general meeting.” What is to be the effect of expulsion? The Club is not like the Jockey Club—it has no competing ground which is its own property, or where it is paramount, and can prevent the peccant party from exhibiting.

“Committees of Poultry Exhibitions to be requested to place their Shows under the rules of the Club. The Stewards to appoint Judges when desired to do so. The Judges to judge according to the rules drawn up for their guidance.”

If the Club means to do anything at all, it ought to provide Committee, Secretary, and Judges. It should offer pen money. It might advertise that any place having a fitting building, and undertaking to provide the sum of £ —, shall, on application to the Poultry Club, be provided with a poultry show, conducted on the most approved principles. There is no objection to the appointment of Judges, but there will be difficulty about the rules. Who shall judge the Judges? Fancy a Yorkshireman at the Spangled Hamburg class, and finding in his book of rules that Golden cocks must have black breasts. He would resign—a black breast is a heresy in his eye. In the search after immaculate Judges, it will occur, perhaps, that for English Shows it may be desirable to have Judges from Scotland or Ireland. Both pin their faith to purely black breasts and tails in Dorkings. Fancy the dismay in the general class.

But the “Judge or Judges,” what are they to do? They

must judge according to the rules; and any person having a complaint of a glaring departure from the rules of judging, shall lay the same before the Stewards who may be present to investigate. The Stewards to call on the Judges for an explanation. This rule appears to be a joke. Has it entered into the minds of the framers to ask themselves whether the office is a profitable one, and whether men of standing and position in society are disposed to submit to this? Any one would suppose, and it may be so, that there are competent persons who are constantly applying for the office, and either that it affords them a livelihood, or that the office has such charms that those who seek to fill it will submit to such rules as these.

But let us deal with the programme. "A want has been felt of a fixed standard by which each variety may be judged." The list of Stewards comprises some of the most successful exhibitors in England. If there has been such difficulty in knowing how to breed for certain points of excellence essential to success, whence arises their good fortune, for it can be nothing else?

The duration of poultry shows, and their success where they are well conducted, bear good testimony to the soundness of the awards taken as a whole, while the position constantly occupied by certain yards proves that good strains hold their own.

We like clubs; contact is good and profitable for men engaged in the same pursuit. The communication of knowledge one to another; the record of novel and interesting events connected with the pursuit; compiling statistics, of which we stand so much in need; and the treatment of the poultry question as one affording a delightful and healthful amusement—all these come within the legitimate scope of a Poultry Club, and are calculated to do good; but when the Committee of Stewards talk of laying down rules for judging, we think they have only to try them among themselves with closed doors to find the impossibility of agreeing.

We believe the Club's outset to be in the wrong direction, and we anticipate a short life for it.

MALAY FOWLS.

In your Number for March 10th (which, unfortunately, I did not receive until the end of the week), I notice a letter from Mr. Fox, of Devizes, asking for a fixed standard of points to be adhered to in rearing "Malays," and referring to the variations in opinion amongst judges respecting the points of this breed. You have appended a very full, and, in the main, a very correct description of those points; but as a Malay breeder and admirer of twenty-five years standing, I am desirous of pointing out what appears to me likely to be misunderstood in your description. I refer to the use of the word "scanty," as applied to the plumage. If your meaning be that the feathers should be very short, I quite agree with you; but this is not the meaning generally attached to that word. Were it possible to number the feathers on the body of a fowl, I believe it would be found that every breed possesses the same, the difference being length and softness in some breeds, shortness and hardness in others. Amongst the latter I place the Malay. I know of no breed in which the feathers are so short and hard; but I demur to the necessity on this account, for the plumage to appear so scanty that any part of the body should exhibit a destitution of feathers. Certainly, "the plumage should not hide shape," which it would do if long, loose, and flowing; but unless the plumage be in the most perfect order, and brilliant in metallic lustre, the shape of the body and shortness of feather render this breed the most ungainly of any; and it is owing to the absence of condition in plumage, in which so many owners of Malays exhibit their birds, which gives rise to the remarks we often hear at exhibitions, in depreciation of this most valuable and (if shown as they ought to be) majestic breed. Your description ends with the sentence, "there is no fixed colour for the legs or plumage." As to plumage, of course all colours are admissible, from white to black; but the legs, in every case, should be yellow. Birds with legs of any other colour could not be exhibited in the Malay class.

I fear in many cases perfection of plumage has been lost sight by some of our judges, and prizes awarded to birds of good blood, though in wretched feather. I venture to think (and upon this principle I have ever myself acted in awarding prizes, whatever might have been the breed) that blood and feather should both be looked for in greater or less perfection; but that birds

possessing only one of these qualifications are ineligible for securing a high position on the prize list.—CHAS. BALLANCE.

[We have seen as good Malays with white legs as we ever saw with yellow; and we have seen birds in the highest condition running in a farmyard, faultless in lustre and feather, yet showing the points we noticed in our last—viz., naked parts of the body and wings.]

TAUNTON POULTRY ASSOCIATION.

I AM sorry to find that this well-managed and promising Show is dissolved. I cannot perceive what the non-attendance of the subscribers has to do with it in any way. So long as they pay their subscriptions it is quite optional whether they attend the meetings of the Association. The resignation of the Secretary is, I grant, a serious obstacle; still, is there not some enterprising gentleman on the Committee who is qualified "and at the same time willing" to undertake the laborious duties of the Secretary? I do hope Mr. Ballance will reconsider the matter, and, if he is still determined to give up the office he has held "so ably for some time," he will find a substitute.

I have sent several pens to this Show for the last two years, though the distance is over three hundred miles each way, and the birds always returned to me in excellent feather and condition, which speaks well for the general management; and the plate and prize-money were always sent to the successful competitors within a week after the closing of the Show. Mr. Ballance I always found most obliging, doing everything which lay in his power to please, and, at the same time, win the confidence of his exhibitors.

I am convinced many exhibitors have no conception of the downright hard work which devolves on a secretary in a show of say four to five hundred pens, and am the more confirmed in this opinion when I see the thoughtless remarks which are occasionally made, "that the Secretary and Committee have no right to be exhibitors." What absurdity! Why, who would do the drudgery if these unselfish individuals had not the chance of a prize? And I dare venture to say nine out of ten of the Committeemen throughout the country keep prize poultry.—WESTMORELAND.

WORCESTER AND BATH AND WEST OF ENGLAND POULTRY SHOWS.

THE POULTRY CLUB.

My attention has been directed to a letter in your columns relative to the length of time the birds have to be kept in the yard at the Worcester Show, and I say that I altogether agree in the opinion expressed by the writer. The arrangements of the approaching Bath and West of England Show appear, however, to be still more objectionable—the birds in that instance being required to be in the yard by ten on Friday morning, whilst the Show will not open till the Monday morning following. Surely the parties who have superintended these arrangements must either have had but little experience in the duties they have undertaken, or have committed a serious oversight; for unless the circumstances are of a very peculiar character indeed there can be no necessity for having the birds cooped-up so long before the Exhibition commences. Besides, as any one with the least pretension to experience in such matters well knows, few birds can undergo such an ordeal of confinement as that involved in the five days during which the Show is to be open, and the three-days confinement previously, especially at such a season of the year, without serious injury—an injury that would render them next to valueless as exhibition birds in future. It is, indeed, a question whether the chickens would survive it, the heat of June being, in fact, far more trying for birds thus penned than the cold season of December. Then the old birds will be on the point of moulting, when they are unequal to sustaining the same amount of hardship as at other times.

Before closing this communication, I will, with your permission, add a remark or two on the Poultry Club in the course of formation. I had quite expected to see the matter more fully canvassed in your paper.* It is right that those who are interested in the subject should be put in full possession of the objects contemplated in its establishment, and the mode in

* The writer had not seen what we published last week.—EDS. J. OF H.

which it is proposed to carry them out. Discussion on these points could not fail to be beneficial. What I have been able to gather from your paper, and from a friend or two who were at the private meeting of the Poultry Club, has by no means favourably impressed me.

If I am correctly informed, it is intended to frame a series of rules by which birds are to be judged—a course of procedure which could not fail to bring the Club into collision with those who have to perform the duty of judges. What gentleman of any standing as a poultry judge, would, if he had any self-respect, submit to the kind of dictation implied in placing in his hands a code of rules drawn up by parties less conversant with the subject than himself? Besides, there are points in connection with the merits of different birds for which no rules can provide, and any one who is not capable of judging poultry without the aid of printed rules, has no claims which qualify him to fill the office, and ought not to aspire to it. It would be interesting to hear the opinion of some of our best judges on the subject. If, as I also believe is the case, it is the intention of the Club to appoint the judges at some of the principal shows, I should like to know how Mr. Hewitt would feel on the matter, if his appointment should be accompanied by a number of rules to direct him in the exercise of his office. It is very problematical whether he would accept it under such conditions.

That there is great room for improvement in poultry exhibitions is undeniable; but it is questionable, not simply whether such an arrangement would work advantageously in promoting that object, but whether it would be practicable. Whatever improvement is to be effected, it is certain it must be by the mutual concurrence of both judges and exhibitors, without which the most promising arrangements would fall through.—J.

EXOTIC HONEY BEES—SIZE OF THEIR CELLS.

I AM indebted to the kindness of Mr. Charles Darwin, for specimens of bees and comb of two foreign kinds of honey bees, which differ in many respects from either of our European species. The first is a bit of virgin comb and bees sent by Mr. Mann, either from Fernando Po or the opposite mainland of west Africa. The bees, as far as I can identify them, are *Apis Adansonii*, and are much smaller than their European brethren, but with this exception appear nearly identical with the *Ligurians*, possessing the same orange-coloured abdominal rings. Their comb, on the other hand, differs in no respect from that of the common hive bee, if we except a reddish tinge, due, probably, to the colour of the honey which it once contained, and from which it had originally been secreted. Although, as before stated, the bees themselves are notably smaller, their cells are of precisely the same diameter as those constructed by the European species. Secondly, I have a piece of brood-comb and bees of the species *Apis testacea*, brought by Mr. Wallace from the island of Timor, in the Eastern Archipelago. Those bees and the allied species, *Apis dorsata*, are about one-third longer and stronger than our English honey-bee, and are indigenous to Borneo, Ceylon, Hindostan, and the islands of the Eastern Archipelago. Their extraordinary size is evidenced by the sealed brood-comb, which is no less than an inch and one-third in thickness, whilst sealed brood-comb of *Apis mellifica*, at any rate during the first year, is barely an inch thick. The great area of their wings, and the length of their abdomen, appear to me conclusive as to their wonderful powers of flight, and great honey-gathering capabilities; but I was amazed to find that the most careful measurement resulted in establishing the fact, that their cells likewise were of precisely the same diameter as those of the European species.—A DEVONSHIRE BEE-KEEPER.

WOODBURY FRAME-HIVES MADE IN STRAW.

THE advantages possessed by straw over wood as a material for the construction of bee-hives have often been pressed upon my attention by apiarists whose great experience entitles their opinions to the utmost respect, whilst the course of events in my own apiary has been such as often to give weight to their suggestions. One obstacle, however, has always stood in the way of my adopting straw hives, and this has been the difficulty of procuring them of the perfectly square form required for the

reception of frames. When last in London I drew the attention of my friends, Messrs. Neighbour & Son,* to the advantages possessed by straw, and suggested that they should endeavour to produce a straw hive which would meet my requirements. I have now much pleasure in announcing that they have perfectly succeeded, and manufacture Woodbury-hives in straw, equalling wood in firmness, squareness, and stability, and which, in fact, leave nothing to be desired; whilst their moderate price is an advantage by no means to be despised. I have already many of these hives in use in my own apiary, and I think few will regret following in this respect the example of—
A DEVONSHIRE BEE-KEEPER.

* 149, Regent Street, and 127, High Holborn.

EVENTS OF THE SEASON.

THERE was a nest of young Thrushes, nearly fledged, in Leadenhall Market last Tuesday.

SILVER PHEASANTS began laying March 17.

THE first Plover's eggs were sent up to London March 24th. The usual day is on the 25th. In 1862, the first came in on the 21st.

OUR LETTER BOX.

DIARY OF THE DAIRY, &c. (*A Gardener*).—Its publication has been abandoned, we believe.

CRÈVE CŒUR HENS DYING (*M. J.*).—The symptom, "swelling of the abdomen until it touches the ground, becoming red and death ensuing," intimates that the egg-passages are inflamed, probably from the birds being overloaded with fat. Give them a table-spoonful of castor oil, no hard corn, very little barley or other meal; but plenty of boiled potatoes and lettuce-leaves.

MANAGEMENT OF CALIFORNIAN QUAILS (*Constant Reader*).—There is little difficulty in keeping and breeding the Californian Quail. They require only a small space. Their food is simple—oats, barley, and green meat. They are very prolific, laying from twenty to thirty eggs, a few of which they may be allowed to rear themselves. A very successful breeder who keeps many pairs, has them in different divisions round a yard; one pair in each cage or pen, which is about 6 feet in depth by 3 wide. Each pair in turn has the run of the whole yard or enclosure, which is more than half greensward. This, it is said, prevents the hens from getting too fat, which is dangerous for them in the laying season, and often fatal. There is really no art in keeping them; all they require is gravel, dry dust, oats, barley, and green food, with as good a run as may be convenient.

CHICKENS WITH COLDS (*P. W. T.*).—If the chickens which snuffle and have mucus in their nostrils roost on the stones of the stable, they are suffering from chill contracted from it. They must not roost on board, brick, or stone. If they have taken to the stable they will not be satisfied elsewhere. Make up a warm corner for them, and cover it so deep with dry gravel or sand they shall not feel the damp through it. The best treatment for the snuffle, is to feed three times per day with stale bread soaked in ale. You may give, if that fails, small pieces of camphor half the size of a pea.

MALAY FOWLS' LEGS (*F. J. C.*).—We do not at all agree with you about the legs of Malays, and we repeat our opinion that the colour is not essential.

BREEDING CANARIES (*R. C. B.*).—Keep the birds together a little longer—say a fortnight—and give them egg, mawseed, and hemp, and provide them, if not already done, with building materials. Do not take out the slide, the pans will be better separated. If at the end of the fortnight the birds do not agree, we would advise you to change them; but we think that they will be sociable after a time.

REAL SPRING CHICKENS (*A Subscriber*).—The fowls that produce the "real spring chickens" are to be had in Sussex only, about Handcross, Cuckfield, the neighbourhood of Lewes, and East Grinstead. The *Brahma* *Pootra* is the fowl you want, as they will rear themselves in any weather.

PREVENTING HENS SITTING (*H. N. D., Woolwich*).—There is always more or less of cruelty in preventing hens from sitting, as it is a natural operation. The most humane plan is to shut them up in a bare place, where there is neither hay, straw, box, basket, nor hole. They will look for something or somewhere to sit upon, and, failing it, at the end of a fortnight may be turned out with the others.

COCK DROOPING (*A. H.*).—We fear some internal organ is chronically diseased. Give a dessert-spoonful of castor oil, and offer him some bread soaked in ale.

KEEPING FOWLS (*R. Godfrey*).—Your space will do for a cock and three hens of Buff Cochins-Chinas. The place under the stairs would do for a roosting-place, if enclosed. The wire-netting had better be 5 or 6 feet high and no rail along the top. Have some limy rubbish in a corner, and the floor of the roosting-place covered with 3 inches deep of sand.

LONDON MARKETS.—MARCH 30.

POULTRY.

There is but a small supply of poultry at market; but the trade is so bad, there is as much as is required.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	4	0	4	6	Guinea Fowl	2	6	3	0
Smaller do	3	0	3	6	Hares	0	0	0	0
Chickens	2	6	3	0	Rabbits	1	4	1	5
Goslings	6	0	6	6	Wild do	0	8	0	9
Duckings	5	0	5	6	Pigeons	0	7	0	6

WEEKLY CALENDAR.

Day of M'th Week.		APRIL 7—13, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.		Sun Sets.		Moon Rises and Sets		Moon's Age.		Clock before Sun.		Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.											
7	Tu	EASTER TUESDAY. P. LEOPOLD b.	30.182—20.093	degrees.	N.E.	.01	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. s.	m. s.	m. s.	m. s.	97
8	W	J. C. Loudon born, 1783. G. [1853,	30.229—30.091	53—42	N.E.	.69	25 af 5	40 af 6	20 11	20 11	20 11	20 11	19	2 15	2 15	2 15	98
9	Th	Crowberry flowers.	30.047—29.929	48—38	N.E.	.73	23 5	41 6	23 0	23 0	23 0	23 0	20	1 58	1 58	1 58	99
10	F	Birch flowers.	30.000—29.904	51—39	N.E.	—	20 5	43 6	23 0	23 0	23 0	23 0	21	1 41	1 41	1 41	100
11	S	W. Kent died, 1748. G.	30.166—30.077	56—39	N.E.	—	18 5	45 6	14 1	14 1	14 1	14 1	22	1 24	1 24	1 24	101
12	Su	1st, or LOW SUNDAY.	30.248—30.138	45—27	N.E.	—	16 5	46 6	54 1	54 1	54 1	54 1	23	1 8	1 8	1 8	102
13	M	Box flowers.	30.139—29.852	46—20	N.	—	14 5	48 6	27 2	27 2	27 2	27 2	24	0 52	0 52	0 52	103

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 55.7° and 35.3° respectively. The greatest heat, 79°, occurred on the 7th, in 1859; and the lowest cold, 20°, on the 10th, in 1850. During the period 130 days were fine, and on 122 rain fell.

HARDINESS OF SIKKIM RHODODENDRONS.



R. ROBSON, at page 224, has referred to my having found two or three species of Sikkim Rhododendrons hardy. It may interest him, and perhaps others, to know that I have found all

that I have had to do with, consisting of those sent over by Dr. Hooker and distributed from Kew, perfectly hardy, with the exception of Dalhousianum and Edgworthii.

They have now been planted out in the open borders for five years, and many of them have flowered; but, unfortunately, like all the first cross with the Nepaul varieties, they flower too early to be of much use out of doors, unless in very favourable seasons.

At the time I am writing (March 30), I have ciliatum in beautiful flower; also a plant of Wallichii 5 feet high, with a fine truss expanded, and others swelling fast. This is pretty much in the way of the old campanulatum, only the colour is deeper. Robustum is another in the same way, but with larger leaves and more compact habit. Thomsoni and fulgens both look very promising, but have not flowered out of doors yet. Campylocarpum has flowered the last three years. This has a compact truss, individual flowers rather small, and the colour is a delicate violet purple. Glaucum, which is figured in the same Number, flowers very freely, and when in flower is very pretty, but the plant is not always handsome. Cinnabarinum and anthopogon have also flowered freely. Madden's argenteum is a very compact-growing plant, and when larger will have a very handsome appearance without flowers. But the gem of all for foliage is Falconeri, and it is as hardy as a laurel; but unfortunately the leaves are so large and heavy, that unless very much sheltered they get broken by high winds. Barbatum, also, has a very good foliage, and is a handsome-growing plant.

Some others which with me came up amongst the fulgens, but are very different from it, are very promising in foliage and habit, but have not yet flowered. The great fault of most of them is early flowering, and early starting into growth, by which the points of the leaves are sometimes nipped by the morning frosts, giving them in the summer the appearance of being burnt; yet, notwithstanding all drawbacks, they are an interesting race of plants, and likely to find work for the hybridiser for some years yet.

I have not had much experience with the Bhotan varieties; but I have one plant now, said to be a Bhotan,

No. 106.—VOL. IV., NEW SERIES.

which has three beautiful, yellow-looking, smooth flower-buds, with no sign of expansion yet. If it turn out well I will let you know.—JOHN COX, *Redleaf*.

FUMIGATING WITH TOBACCO.

GARDENING operations of many kinds call for a display of tact as well as of skill. In fact, those two qualities are closely allied, and to a certain extent are, or should be, inseparable. What the skilful man does he does well, but tact enables him to do it quickly, and often with imperfect means. Thus he economises time and material while doing everything at the right time and in the right place. Much has been said about taking time by the forelock and having everything done in advance, so that one may be prepared for a season of pressure; but this is only one side of the question, and the man of tact has no occasion to hurry at any particular season, although he does not, to ordinary observation, keep in advance of his work.

In no particular is a display of tact more requisite than in doing battle with the various pests which to the careless gardener are a source of trouble and anxiety, but which the man who possesses tact takes as a matter of course, for he knows how, when, and where to meet them. The appearance of green fly, thrips, scale, mealy bug, red spider, &c., on his plants, if they do appear, gives him no anxiety, for he applies the remedy or remedies, and it is done with; but then comes the question, What are the remedies? A dozen gardeners will answer the question in as many different ways.

In my school-boy days I remember almost every boy in the school had a way of his own of forming the figure 8. One would commence below on the right hand, another on the left; one would begin at the top, another would make a regular pothook of it, and some, again, would make a horizontal dash to connect the points, and so on. In this way gardeners differ in performing some of the most simple operations for destroying green fly. One says, Use nothing but the best tobacco, and apply it by means of the bellows; another says, Use the flower-pot pierced with holes. One says tobacco paper is best; another, Try Neal's pastils; and consequently Neal's pastils are tried, probably with not sufficient strength, and the fly is not killed, or the dose is too strong, and the plants are killed as well as the fly. Advice of this kind is often given and taken; mishaps occur through misunderstanding or misapplying the remedies, which are set down as ineffectual, and are, with those who recommend them and the vendors, mentally consigned to the rubbish-heap, if a more unpleasant situation does not happen to be before the mental vision of the disappointed experimentalist.

In the process of fumigating with tobacco or tobacco paper—for, in my opinion, both are equally safe and effective—I could never perceive the necessity of being in the smoke myself, or of seeing others inside the house with it, for apart from the fact of the operator being

No. 758.—VOL. XXIX., OLD SERIES.

almost suffocated, the door has to be opened as, half choked, he leaves probably before the work is complete. There is another objection: the smoke hangs about a person's dress, while the smell does not improve by age, and lasts for several days. To be inside the house during the operation is by no means necessary, as I have always found: consequently, I never use the ordinary fumigating-bellows and dislike them, although some are so firmly attached to them as to prefer them to every other appliance for fumigating.

Now, the various ways and means of fumigating which have come under my own immediate observation convince me that more depends upon the way in which the smoke is applied, and on adapting the quantity to the space to be fumigated, than on the material itself. I have used the different sorts of tobacco and also tobacco paper, and find that nothing better could be wished; yet one is no better than the other. I once wished to try the pastils, but at the nursery where I applied for them they said they had not any at the time, and that their experience of them was that they destroyed everything but the insects. How true this was I had no opportunity of proving. I have heard from those who have tried them that they are unsafe; but, as I never take the bare word of others in such matters, having known several instances of plants being killed or injured, as was alleged, with bad tobacco or tobacco paper, but in reality, as I am pretty certain, through the quantity being disproportioned to the space, I can, therefore, say nothing in their favour or otherwise. With regard to tobacco and tobacco paper, I have used both in several different ways; and if I have found the leaves of plants marked or the insects not killed, I blame myself, and not the material, for that is entirely blameless.

In the first place, it is always best—at least, I have found it so—to fumigate towards night, when the house is shut up and there is no fear of the sun shining on it, and then, as it has been often recommended, it is better to smoke two nights in succession than to depend on one fumigation, especially when it is for thrips, because it takes a strong dose to kill these all at once, and the quantity of smoke necessary to do so may injure the plants; but when the insects have had a weaker dose it makes them sick, and before they have recovered, a similar dose the following night settles them.

It is, then, worth while to take the measure of the enclosed space, and find out, if possible, just the exact quantity of tobacco or paper that will give the required quantity of smoke. This is advisable, both on the score of economy and to save time and trouble in doing the work effectually. There is more tobacco wasted through doing the work ineffectually than many would believe. I have been surprised myself when told that 7 or 8 lbs. of tobacco had been used, or rather misused, for smoking two small houses within three weeks, and this in cases where the operators were supposed to understand the matter. I have found half a pound of tobacco, or the same weight of paper, quite sufficient for a house 30 feet long by 16 wide and 9 feet in height; and this made into two fumigations, with, perhaps, a trifle the most at the last performance. A pit or frame will require much less, for it must be remembered that the height makes a great difference in the quantity of material requisite; for the farther the plants are from the roof the denser the smoke should be. In a pit the plants are generally within a few inches of the glass, and it is in such structures that plants are generally injured from an over-strong application of smoke. It is, therefore, advisable to use but a very small quantity of tobacco in smoking pits and frames, and to increase the quantity if the dose is found ineffectual.

In applying the smoke, the plan I generally prefer is to take a common flower-pot—a 32 size is very convenient—place it on a larger one that stands on the ground inverted, so that the apertures of both are clear for the draught of air. Put in the upper one a few pieces of charcoal ignited, and when they are thoroughly alight tear up some brown paper and put in, and then put on the tobacco or tobacco paper, which will consume gradually and give out a good smoke. Another plan I have generally adopted with regard to small houses, frames, &c., is to take some coarse brown paper, steep it in a solution of saltpetre, dry it, then spread out the tobacco on pieces of 6 inches or a foot square, roll both together, and tie with twine or matting. Then suspend by one end and light the other; let two or three of these be lighted according to the size of the house or pit, and let them smoulder. If properly done, this will be found as clean and effectual a method of fumigating as need be.

F. CHITTY.

RHODODENDRON CULTURE.

In your article on the above subject in your Number for the 24th ult., I was surprised to find it mentioned that the Sikkim *Rhododendron ciliatum* did not succeed well out of doors. With us, about 550 feet above the level of the sea, it, with several others of its class, grows and blooms far better outside than in pots in the conservatory. I may instance *Falcooneri*, *fulgens*, *Thomsoni*, *Hookeri*, besides the three arboreums, *scarlet*, *rose*, and *white*, *Russellianum*, &c., as sorts that have been out here for from five to eight years, and are growing luxuriantly, but have not all flowered as yet. One, *ciliatum*, has been out thirteen years, and is now covered with bloom, being about 2½ feet high and more than 3 feet in diameter; I enclose a flower and a leaf of it; the latter is, I think, double the size I have ever seen the foliage of it on house plants.

With respect to hybridising generally I do not entirely agree with Mr. Robson. I have found the best results from avoiding too much similarity between the parent plants; for instance, in crossing two *Fuchsias*—say *Clio* and *Queen of Hanover*, the progeny, from seventy to eighty plants, were wretched, with leaves like *microphylla*, and worthless flowers; while in crossing a dark and light variety the progeny were often good, while some took after the one parent and some after the other.

Recollecting that the original *Fuchsias gracilis*, *globosa*, &c., which now grow 7 feet high outside, were once considered greenhouse plants, I planted-out several of the improved varieties about six years since, which I find do nearly as well as the common sorts. For instance: *Venus di Medici* in the open ground is about 3 feet high now and as much in diameter. Some are still killed to the ground in a hard winter, but come up again strong before the 1st of April, and are beautiful objects in the flower garden.—H. H. GLENVILLE.

SENSATION NAMES.

PRAY give a little wholesome advice to some of your contributors and advertisers with regard to the naming of novelties, &c. Our nervous system had scarcely recovered itself from the weekly attacks of the "Roaring Lion Strawberry" when we were as much astonished, as we had been terrified before, by the announcement of the "Good-Gracious Polyanthus." Some of your readers, if we recollect rightly, were rather shocked at the last-named epithet; but we are free to confess we were not morally sensitive on the point, but merely regarded the name as simply ridiculous. We have, however, been slightly startled by the sudden appearance in your No. 104 of the "Phantom Bouquet," the subject of which is a review of a book of that name on the art of skeletonising leaves, &c. The author has, probably, taken a leaf out of Mr. Home's book, or accompanied that spirited individual in an aerial exploit, hovering occasionally over garden rubbish-heaps, and holding communion with departed vegetation. How this may be we know not, but this we know, that it would be well to check the prevailing taste for such absurdities; and if you would be instrumental in doing this you would confer a favour on the majority of your readers, and especially—R. T. E., *Shrewsbury*.

THE WARDEN OF WINCHESTER'S GARDEN.

THE readers of THE JOURNAL OF HORTICULTURE are no strangers to this garden, or at any rate to its gardener, for Mr. Weaver has oftentimes given them the benefit of his lengthened experience and ripened judgment; and as I heard much of him from a valued friend and earnest horticulturist, I determined on a late visit to the old cathedral city of William of Wykeham to pay him a visit. And although March is but a poor month for seeing gardens, even though after a mild winter, I was, as I was assured I should be, most pleased with all I saw and heard; and perhaps a few reminiscences may not be uninteresting to your readers.

When I speak of the Warden's garden, it should be borne in mind that we are not talking of one with acres of glass, miles of hot-water pipes, and with a mint of money at command to meet all the requirements of a first-rate place. The motto of the Wardens seems to be *utile et dulce*—a little more of the former than the latter. The place is not a show place, but an ordinary quiet but pretty garden, having the charm of a fine lawn and a nice stream of water; giving one, perhaps the notion

that the Wardens, fresh from the remembrances of classic Oxford, had tried their best to reproduce in their own way the scenes of cloistered ease which make the daughter of the Isis so perfectly unique and charming. Nor, again, is Mr. Weaver one of the new race of what some one has called "kid-glove gardeners." He has not the ologies all at his fingers' ends, although cases of British and foreign insects and books, presented to him by the students of the Training College in gratitude for his instruction, attest that he is a lover of nature and able to use his mother tongue. No: Mr. Weaver is one of those shrewd, honest, hardheaded men, who are accustomed to listen to what everybody has to say, but to have a judgment of their own and act upon it—no blind adherent of old customs, but no extravagant praiser of new-fangled notions, and therefore one finds in his garden a good combination of both old and new methods and plans.

I saw him first in his fruit-room. Bless me! what a quantity we hear about fruit-rooms, and trays, and shelves, and all sorts of things as necessary to keep Apples and Pears, until one begins to be thankful that we do not grow enough of them to need such an elaborate structure. But what was Mr. Weaver's fruit-room? Simply a shed—such as we ordinarily term a potting-shed, with the simple addition of a door to be locked and kept all secure. "But, then, of course, it was all arranged with shelves and straw, &c." Nothing of the sort—a few common boxes, in which the Apples lay some foot in depth, touching one another (an awful notion, I believe, in the fruit-room); and yet out of these he took Ribston Pippins, Sykehouse Russet, Court of Wick, and Scarlet Nonpareil as fresh, bright-coloured, and crisp as the day they were gathered off the trees; and he told me that he has more than once had his Apples frozen hard without any apparent detriment; though when the winter is very severe he removes his boxes into an inner room, the roof of which is thatched very thickly and quite frostproof.

As I am speaking of fruit, I should mention that in a little garden attached to his own house he has an orchard-house, in which he grows some fine Grapes and has planted a few Peach trees; but, like most practical men, he has a contempt for fruit trees in pots. He says that where one has a clever man, whom it pays to give a large income to, and where expense is of no consequence, there it may be done; but that even then the fruit is poor in comparison with that grown on trees planted out. I have never myself seen an orchard-house but what the owner had to make many apologies for failures (always excepting Mr. Rivers, of Sawbridgeworth).

In another small house heated by a flue he had also some Vines, from which, he said, he had always fine crops. Formerly the walls of this garden were completely covered with Black Hamburg Vines, which were, when in fruit, quite a picture. About four years ago mildew attacked them, and he has been obliged since then to give them up.

But to return to the Warden's garden. There is there just that combination of the old and new styles of gardening which one longs to see. There is a noble herbaceous border which runs round the lawn, and in it a fine collection of the best and most showy plants of that class so planted as to allow space for large plants of Pelargoniums, &c., to be placed out amongst them in summer; while in another part there is a small parterre laid out for bedding things. Thus flowers are secured at all seasons, and that "ploughed-field character" which one's own garden assumes at this season is obviated.

In the vegetable and hardy fruit garden everything betokened the superintendence of an active and sensible man. I learned there a few things hitherto unknown to me. Mr. Weaver, for instance, never ridges up his Asparagus-beds, as he says digging between the beds is sure to cut up some of the roots, which in old beds (and some of his are said to be 100 years old), are sure to make their way across. He manures well, and gently forks the beds over. Neither will he tolerate an Asparagus-knife, nor allow the shoots to be cut deep beneath the soil, as he says injury is sure to be done to the stools by it, and that he does not see the advantage of having a long white stalk with a little edible piece at the top. It appears that the late Warden was a great lover of the Asparagus, and that hence it has been cultivated with zeal, and I may say with great success. Mr. Weaver has before this given his experience on its growth in the pages of THE COTTAGE GARDENER, and I can well believe that the beds are very fine.

Then as to Strawberries. What think our fragarian friends of growing only yearling plants, and planting them close to-

gether—say about 9 inches from plant to plant, and in quincunx style? Yet this was Mr. Weaver's plan; and on my expressing a doubt as to the quantity produced he assured me that the crop was very large. His plan is to keep the hoe gently at work amongst them; and at this period to give them a good top-dressing, which helps them on wonderfully, and he says you can have no idea of the crops that he grows.

Raspberries, too, were never allowed to be dug between. There were beds there twenty years old that never have had a spade amongst them. The hoe is liberally used and manure freely given. Of these, again, the crops are said to be very fine, and from the appearance of the canes I can well believe it.

I do not at all dislike either to see new plans or to try them; but when there is such a rage for "novelty," it is really refreshing to find one who dares to keep to old plans; and without being *laudator temporis acti*, or believing "no times like the old times"—not moved from what he knows to be good plans by all the alleged charms of new beauties—it seemed of a piece with the old grey ways of the College, for one felt that to have found everything "spic span and new" would have been incongruous. I quite enjoyed my little chat; and in many pleasing recollections of the old cathedral city, do not esteem that to be the least when I had an opportunity, even in March, of visiting the Warden's garden and making the acquaintance of Mr. Weaver.—D., Deal.

THE PROFIT FROM FARMING TWO ACRES.

I MADE the acquisition the other day at your office in Fleet Street, of a small work, "How to Farm Two Acres Profitably," by Mr. Robson. The book is an excellent one, so far as it goes; but, notwithstanding its great merit, I was disappointed at not finding one word regarding either expense or profit, the alpha and omega of any enterprise whatever.

Now, I look upon you as a sort of godfather to the little book in question. Allow me to inquire, What sum may be necessary to bring the two imaginary acres into the state supposed by Mr. Robson? and what profit may be reasonably expected from the same at the year's end?

My intention is to farm ten acres profitably, both for pleasure and emolument; and having the outlay and income for two acres, it requires no great stretch of arithmetic to multiply these by five to obtain the result for ten; though not quite, as ten may be more economically worked than only two.

For Mr. Robson's guidance, I ought to state that I may come into possession of the ten acres unprovided with even a spade, and as practically ignorant of agriculture as a Hottentot, though as learned theoretically as an Alderman Mechi: consequently, I must have an intelligent and practical man to assist, and often to advise, in carrying on the various operations of the field, which is to be reckoned on the side of expenditure. I mean to have everything done on the most recent scientific principles, but without launching out into experimental speculations. The desired site to be within a marketable distance of London, if possible, or that of Torquay, or other eligible place on the south coast.

To resume: What is the outlay and income of the two acres? supposing I come into them as unprovided as father Adam into his farm. The same as regards the ten acres? the land being purchased in both suppositions.—W. B.

[Upon handing the above to Mr. Robson, he writes us as follows:—

"I confess it is far from being an easy matter to give such a reply to the letter of 'W. B.,' as he would like to have. True, it is easy enough to put forth a set of figures that might appear feasible, and could even be supported by the absolute practical working of such things; but I have deemed it better not to do so, as local circumstances have so much influence on the *pro* and *con.* of such undertakings, that statements such as might be given in a tabular form in one case, would only mislead in another.

"The original intention of the little work referred to was to give advice to any one not acquainted with rural affairs, who might be disposed to retire to such a place in a suburban or country district, much, if not all of the produce being supposed to be wanted for the consumption of the family of the occupier. This, however, would not be the case in the ten-acre holding; so that the ordinary rule of multiplication cannot be applied there.

"Ten acres may be managed very prudently, and I may say

profitably, by having eight acres of it grass land, if the owner wanted to keep a horse and a cow or two, and the remaining two acres as described, while it is hardly likely that he will want all the ten acres in garden stuff; and if he cultivate for sale, he ought well to study what the ground is best adapted for, and plant more extensively of those crops for which it is suitable. Even then, unless he has well studied the requirements of the market in his neighbourhood, he will find it difficult to undersell those whose personal and practical experience is already in the field against him; but he may succeed, though, probably, not until after some practice. This need not surprise 'W. B.,' who if he be a city man retiring to the country, with a view to make gardening pursuits as profitable as he may perhaps have made his city business, it is not unfair to ask if he could write a small work on the mode of making a fortune by the business he has just left, and make that work intelligible and easily to be followed by a midland county's farmer with a certainty of success.

"It is easy to perceive that a close attention to the minutiae of business in both cases will alone be accompanied by a good result; but the pursuit taken up early in life is the one most likely to prosper. However, I would not dishearten 'W. B.,' nor any other person intending entering business of this kind; but I will help him a little in calculating his labour expenses. His returns I must leave him to estimate himself; only it is fair to say, that if he require all the produce of two acres for his own use, it ought to be calculated as worth the retail price he would have to pay for it if he bought the articles at the greengrocer's.

"Trenching on dry, stony ground is worth £6 per acre, and 9d. per load for the stones taken out. In many cases these stones are sold to a good profit to the road surveyor and others. If there be tree roots on the ground, a pile of these stacked up close together, making 128 cubic feet, is often sold for 8s. or 10s. This, when dry, often sells for double that amount. Special agreements for work of this kind are sometimes entered into, allowing the workman to have either the roots and stones, or both.

"Digging is done in various modes. Rough digging, shallow, and the turned-up portion not broken, is from 16s. to 18s., or 20s. per acre. This is often paid for what is dug up in fruit plantations. Deeper digging and breaking the clods is worth double this amount. A hedge may be trimmed in summer for 1s. or 1s. 6d. per 100 yards. Mowing of hay, if the crop is good, and in the neighbourhood of a town, will cost 6s. or more per acre. Mowing short grass is difficult to calculate, so much depends on the way it is done. In fact, it is not easy to say what ought to be given for any piece of work without seeing it; neither is it fair to enter into calculation of the profit and loss of undertakings without being on the spot when the undertaking is in working. Railway prospectuses have put forth plausible tables which experience has over and over again proved were hollow and worse than useless. I can, therefore, only say to 'W. B.,' that by using great prudence, economy, and perseverance, he may make his ten-acre cultivation a paying undertaking.—J. ROBSON."

This is just the answer we expected. Soils, situations, and seasons so vary that no one can give a prophetic table of profit and loss with any reasonable prospect of approaching the real result. The best guide for "W. B.," will be the man whose services he purposes retaining, and who, if intelligent and trustworthy as well as industrious, will be the surest leader to success.]

RHODODENDRON SEEDLINGS AND CULTURE.

I AM glad to see in your Number for the 24th ult. a reply to "J. N. M." on the subject of "Rhododendron culture." May I say a few words on the subject? Having grown thousands of seedlings from the best hybrids, I asked one of the questions, which your correspondent there puts, of Mr. Standish, and he very kindly replied to me that "all the best Rhododendrons generally come true from seed." Of course there is a chance of obtaining varieties where the plants are grown in juxtaposition.

It may interest "J. N. M." to know that Rhododendrons *barbatum*, Thomsoni, and Campbelli (all Sikkim), have proved perfectly hardy, and the foliage good at all seasons. These have been planted out since 1858 in an exposed northerly aspect here. Rhododendron *ciliatum* was cut down to the ground in 1861, but is now covered with flowers, having been potted last autumn, and placed in a cold pit on frosty nights or days. All the Bhotan kinds

proved too tender. *Azalea indica alba* has been out in the same exposed portion since 1856, and has flowered every year, remaining unhurt, though unprotected, when Laurels and Bays were all killed or severely injured by frost. Having now proved these plants hardy, they are to be moved into a more sheltered position, to give the Rhododendrons a chance of flowering, and to allow the *Azalea* to flower where the north wind will not tear the blossoms. This is, you may be assured, a rather cool spot, rather damp, and feeling early frosts more than most places in Ireland. Were I to name the county it would mislead your readers, as at one side of the mountains the Myrtle blows as well as in its native *Ischia*, while on this side the climate is more like Switzerland without the advantage of its milder latitude.

I see in your Number of November 25th, 1862, a reply to "AN OLD SUBSCRIBER" (I am an old one, too), in which it is said that "manure is not only not good, but an actual poison to *Azaleas*, *Rhododendrons*, and *Heaths*." This must, no doubt, be true under certain conditions, or it would not be so distinctly stated; but the old saying holds good here, "What does not poison fattens," for in every case in which I have used old well-rotted manure the results have been most satisfactory. Manure, containing long straw or other undecomposed material of that kind which would render the soil open or loose, is certainly most injurious, either applied to the ground before planting or dug-in afterwards; but, indeed, digging is, I think, always destructive to all the *Ericaceae*, and if ever the earth is to be stirred it should be done with a fork, and never even then except to apply manure.

Perhaps you will consider it of sufficient interest to allow me to give your readers the following advice given by Mr. Veitch in his catalogue for 1861, now before me. He says, "Bog or peaty mould is the best; but when this cannot be procured good fertile loam with a dressing of rather fresh cowdung once in two years will grow them well;" and he adds, "a good mixture for them [*American plants*] can be made as follows:—To three parts half-rotted leaves add one part of the turfy surface of a meadow cut about 4 inches thick; to this add a good quantity of white or other sand. Chop but do not beat the soil, and use as rough as possible; should the foliage become yellowish topdress with cowdung, or the use of liquid manure about four times during the month of July will soon change them to dark green." Mr. J. Waterer recommends "well-rotted stable-manure in proportion of one barrowful to six of the former ingredients."

I should not trouble you with these remarks, but that I have saved the lives of some of my most valuable Rhododendrons by the application of manure. Here and there, too, I find a Rhododendron *ferrugineum* losing almost every leaf, but quite revived by pointing-in well-rotted manure, after opening a trench outside the ball of roots, and filling it up with the same stuff. Curious enough, Rhododendron *hirsutum* grows better here than *ferrugineum*. These two kinds, by-the-by, I have never met with in their wild state growing together; they generally occupy distinct districts, though growing at the same altitudes.

In conclusion, it is worth while to remark that though much of the soil here is that best fitted for Rhododendrons, yet there are two other soils in this place—viz., fine limestone gravel and fine rabbit sand of decomposed granite. On both of these last there are to be seen good healthy Rhododendrons, of course more dwarf and less luxuriant, the soil being, I believe, almost entirely devoid of vegetable matter, and no mixture of manure or any thing else being applied; and it may be worth while remarking that on these soils the Rhododendron *ponicum* strain does better than the *catawbiense*.

Enclosed is a small paper of Rhododendron seed of fifty of the best hardy named kinds, having flowered together last season. This is for your correspondent "J. N. M." should he wish for them.—D. C. M., Ireland.

IMPORTANCE OF GENERAL KNOWLEDGE.

IN a late article on attention, &c., which has met with more consideration and sympathy than I ever expected from the greatest gardeners and the employers of gardeners, I borrowed a sentence or two from a nobleman when addressing an Institute at Birmingham. I have just read with great delight the address of the noble Premier on his installation as Rector of the University of Glasgow. I would urge the reading of that address, and that of the Duke of Argyll and others, upon my younger brethren;

and for the sake of those who may not see it entire, the following extract from the speech of Lord Palmerston is well worthy of a place in THE JOURNAL OF HORTICULTURE, where it is sure to come before great numbers of young professionals.—R. F.

"You are all of you, probably, destined to some one particular profession, make everything that belongs to that profession the object of your intense and preferent study; but do not on that account omit acquiring general information on other matters whenever opportunities may present themselves to you for doing so. Whatever the profession a man may enter into he will perform the duties of that profession better by having general knowledge, and that generality of knowledge will not interfere with the successful study of the particular line which he determines to enter. Do not be discouraged by people who say, It is absurd to have a smattering of different things; 'a little knowledge is a dangerous thing.' A little knowledge is better than no knowledge at all. Learn a little of everything of which you can learn anything, it will be useful to you hereafter; though it may not be in your own line, it will be the foundation on which you build up as you go along through life. But bear one thing in mind—be not content with regard to many things with mere rudimentary information, but what little you know, know it well. Do not accept a jingle of words for reality of things: go to fundamental principles; know accurately that which you are desirous of knowing, and, however little that may be, depend upon it that upon that basis you will be more able to build up the future superstructure," &c.

BOILERS.

THE mere fact that there are so many kinds of boilers made and advertised proves that few meet with general approval, and also that there must be a great difference in opinion as to what is required. The only idea which appears to be patent to all boiler-makers is to present as large a heating surface to the action of the fire as possible, and this, all will allow, is a most important one.

I will give my idea of what is requisite to make a perfect boiler, and if those who have had still more experience will do the same some information will be the result.

The points I should insist upon are—1st, That the boiler be made of cast-iron, having proved that wrought-iron ones soon rust through; 2ndly, That it should present as large a surface as possible to the action of the fire; 3rdly, That the return-pipe enter the lowest part of the boiler, and in entering shall not pass through any brickwork whatever; 4thly, That the inside of the boiler be easily examined and cleaned; 5thly, That the furnace be calculated to burn any kind of fuel; 6thly, That there should be room for a good body of fuel under the boiler.

With regard to the third point, in my opinion a most important one, I have seen only one boiler—that of Mr. McNab, of Edinburgh—which in this respect appears to be made on a correct principle. If a boiler be surrounded by a mass of brickwork, and the return-pipe pass through it, it must happen that the circulation will be impeded as the bricks become heated. The bottom of the return-pipe being much hotter than the water returning to the boiler a return current is set up, and the general circulation interfered with. I have lately seen a boiler pulled down that from this cause would not work at all, but the return-pipe in this case passed through a great thickness of hot brickwork.

There are so many boilers made the inside of which cannot be got at, that my fourth point must be generally considered quite unimportant, and perhaps, if nothing but clean soft water is ever used it is not absolutely necessary; but who can be quite sure no one will ever use hard water with or without his consent? There are many boilers only calculated to burn coke or the best large coal; a boiler of this description must be an intolerable nuisance to a man who can procure good cobbles at half the price of coal, or whose cook will not burn up the slack. With regard to the last point, it will be found much more economical to have a good body of hot fuel if the draughts are under control than to be always poking the fire and mending it up, besides requiring less attention at night.

I feel convinced when gardeners have settled what are the requisites of a perfect boiler one will be made much better than any now in use.—J. R. PEARSON, *Chilwell*.

MESSRS. A. HENDERSON & CO.'S HYACINTH SHOW.

THIS month, as usual, the Lapageria-house at the Pine Apple Place Nursery is gay with a choice assortment of Hyacinths and other early flowers; and though, owing to the past year having been unfavourable to the bulbs, some of the spikes are scarcely equal to those shown in previous seasons, the display is well worth inspection.

The stage in the centre of the house is filled up in the middle with young *Araucarias excelsa* and *Cunninghami*, two nice plants of *Araucaria Bidwilli* being placed one at each end; and round the centre of green foliage thus formed, and which serves to set off the flowers to advantage, the Hyacinths are ranged in three rows. The whole of the pots are mossed over, and surrounding the whole is an edging of *Isolepis gracilis*. The side stages are likewise filled with Hyacinths and early Tulips, and from the roof are suspended six baskets filled with Hyacinths edged with *Isolepis gracilis* and having Ivy wreathed round the outside. Near the entrance is a very large basket of Hyacinths in bands of white, blue, and red, arranged on a conical eminence and surrounded by Golden Fleece *Geranium* and *Isolepis*, the whole producing a striking effect. The opposite end of the house is occupied by a bank of *Eparis*, among which *Viscountess Hill* is a pretty crimson variety.

Of the Hyacinths the following are some of the best:—*Single Whites*.—Lord Gray, a very fine waxy white; Madame Van der Hoop; Mont Blanc; Richardson, waxy blush, very fine; and *Tubiflora*.

Single Red.—Beranger, deep red; Charlotte Marianne, striped; Diebitz Sabalskanski; Herstelde Vreede, bright pink, fine; Lina; Mrs. Beecher Stowe; and Solfaterre, brilliant orange scarlet.

Single Blue.—Bleu Mourant, Charles Dickens, Couronne de Celle, Emicus, Grand Lilas, Grande Vidette, Keizer Ferdinand, Orondates, Prince of Saxe Weimer, Robinson (nemophila blue, tinged with lilac on inside, very pretty), and William the First.

Double Red.—Bouquet Royal; Comtesse de la Coste, dark rose; Duke of Wellington, and Panorama.

Double White.—Anna Maria; La Tour d'Auvergne; and Triumph Blandina, blush, with pink eye.

Double Blue.—Mignonne de Dryfhout, pale blue; Paarlboot; Pasquin; Sir John Franklin, marbled blue; and Van Speyk.

Blacks.—General Havelock; La Nuit; Mimosa; Prince Albert; and Uncle Tom, a good dark purple.

Of new sorts, Bouquet Constant, deep red with paler edges; Baron Rothschild, crimson; Jenny Lind, pale rose with pink stripe; Princess Charlotte, rosy pink; are all good single varieties; whilst Petronella Cornellia is a pretty double blush with pink stripes, and Passe Mabopolasser a very fine single violet blue.

Among the Tulips Golden Standard had the leaves edged with white; and of the others, Grand Duc, Keizerskroon, Vermilion, Brilliant, and Thomas Moore, were the most striking.

Several fine varieties of Narcissus were likewise shown, of which Luna is a splendid double white and orange with very large flowers; Malakoff, a fine pure yellow; and Amiable Bouquet, a very large white with yellow cup.

SHADING FERNERIES—FLUE-HEATING.

IN "G. A.'s" article in your Number of the 17th inst. I can see something useful as well as ornamental; but I think some shading may be found more under control than paint on glass. Still, as "G. A." states it is for a permanency, I cannot find so much fault. I, however, wish to point out one or two drawbacks to its general use.

Firstly, Paint, labour, &c., could not well be done carefully under 6d. per square yard. Secondly, Its being put on a little too thickly will occasion great expense of money and time to replace it with a thinner coat. Thirdly, In winter the more light obtained the better; but the paint is still on, and cannot be removed without being washed with soda and water, costing as much to take it off as it cost to put it on. Fourthly, Paint when put on in that style is apt to flake within a year when exposed to a very hot sun and much rain, owing to the want of union with the glass.

Now, what we require is something with which to wash glass with the least expenditure, and producing greater benefit, and with less evils to contend against—something, for example, as may be readily removed when required, so as to be used not only for ferneries, but also stoves, greenhouses, and pits, and I will now offer my opinion as to what this should be.

If we place a small quantity of unslacked lime in a quart of milk, we shall find a substitute for paint on glass: it will give a beautiful shading, which can easily be put on more thickly, or done away with on the first wet day, or on being syringed and

then gently rubbed with a common house-broom. The labour is small, the cost is next to nothing; no tradesman has to be employed, but merely a boy may be trusted to apply it carefully.

"G. A." is right in daubing it on with a dust-brush; for if done in the regular way, unless performed by a very light hand, it will leave many streaks, through which the sun will have sufficient power to burn the green leaves beneath.

Next, this question presents itself to our notice: Should it be applied outside or inside? If the latter, it will last much longer, excepting where there is very much moisture, but will not allow you to obtain any heat from the sun; on the other hand, if applied outwardly, it will give a nice shading, and allow a quantity of heat to be obtained from the sun during the summer months.

Great care ought to be taken in putting it on, so as to avoid covering the paint on the wood, as it is liable to make the paint perish sooner than it otherwise would do. I have seen this simple composition used for the last eight years, and never found any fault with it, and I shall continue to use it. I have tried a mixture of soot and milk for the same purpose, but find I cannot put it on thinly enough to allow of the admission of sufficient light.

One may kill two birds with one stone, if possible. I will, therefore, call your attention to "E.'s" article, which almost immediately follows that of "G. A." Flues, with one or two exceptions, may be considered a dead loss, as compared with hot-water pipes. I would never have the one if it were possible to have the other, as flues are always out of repair, let the smoke out, cause nasty smells, take up much room, and are accompanied by a dozen other annoyances.

In regard to heating by hot air, that might do for a manufactory or warehouse, where you wish to keep articles dry, but never for a greenhouse or stove. Only fancy a quantity of hot, dry air coming against some young foliage: I think it would inevitably burn it. I fancy we always require a certain quantity of moisture in the houses, which would be done away with by "E.'s" plan, unless he stood by all the time to syringe his earthenware pipe. Let him go to Mr. Monro, nurseryman, Colney Street, near St. Albans, and see his excellent manner of heating by hot water. His trials have at length brought him a reward in the shape of a new-fashioned boiler, which quite astonished me when I saw it work. Mr. Monro would be most willing, I believe, to put up a boiler for any one who would, if the boiler succeeded, buy his discovery and have it patented. I am not in a position myself, or would most willingly, for I am certain it only requires to be seen to be brought into general use. He has one at work, which he made himself, and it heats two houses, and is expected to heat a third, with merely rain-water pipes.—J. E. L., JUN.

ROYAL HORTICULTURAL SOCIETY.

MARCH 31.

FLORAL COMMITTEE.—A Meeting of the Committee was held this day on the right-hand terrace of the conservatory at South Kensington. Although there were not many subjects sent for examination there were several plants of much interest and beauty, and which would have amply repaid any of the Fellows for a visit to the garden on that day.

Messrs. Smith, of Dulwich, sent a *Verbena* named *conspicua*, a deep rosy crimson with clear white eye. Also *Azalea Surprise*, flowers of a pinkish ground; the centre of the petals blotched and spotted, and sometimes striped with bright red—a very showy variety with badly-formed flowers, though considered useful for decorative purposes. Messrs. Smith sent also a seedling *Azalea Oracle*—a pretty, smooth, rosy-tinted flower, after the style of *Standard of Perfection*, which it much resembled.

A seedling Wallflower came from F. J. Graham, Esq., and was much admired for its brilliancy of colour—a bright yellow. The scent of this single-flowering variety was most exquisite, and a label of commendation was awarded, it being considered an advance upon other Wallflowers in cultivation.

Mr. Jackson, of Kingston, sent an early-flowering *Pelargonium*, Mrs. Lewis Lloyd, with bright showy carmine flowers; the upper petals deeply marked with a dark spot; the throat purple. Although not possessing the usual requisite properties, a label of commendation was awarded, being a decided improvement in the early-flowering class of *Pelargoniums*.

Mr. Earley, of Digswell, sent cut specimens of three varieties

of *Intermediate Stocks*. Mr. F. Hopwood, a *Cineraria* named *British Sailor*, with a light blue disk, but not equal to many named varieties.

Mr. Bull, Chelsea, sent five *Zonale Pelargoniums* of various shades of colour, also a variegated-leaved variety. No award was made to them at the present season. When they are seen again in the autumn some of these seedlings cannot pass unnoticed. *Auricula* and *Beauty* appeared promising varieties. Mr. Bull also sent *Petunia Captivation*, a very showy single variety, with mauve flowers margined with white; semidouble *Azalea Duc de Nassau*, not new; *Cupressus Lawsoniana variegata*; an *Amaryllis Fire King*, a bright scarlet variety mottled with white, flowers small but very conspicuous. A label of commendation was awarded.

O. Anderson-Henry, Esq., sent a curious plant—*Phædranassa obtusa*, which had no particular merit. The plant had lost its foliage, and perhaps did not appear to the best advantage.

Messrs. Veitch, Chelsea, sent several plants of interest. Among them *Dendrobium luteiflorum*, a very handsome Orchid, to which was awarded a first-class certificate. Perhaps the most interesting plant on the table, sent by Messrs. Veitch, was *Anthurium Scherzerianum*. This plant was exhibited by the gardener to the King of Hanover last July, at South Kensington, and attracted much admiration from its extremely novel and handsome appearance. It is nearly allied to the *Arads*, bearing bright scarlet spathes, with beautiful dark green foliage. It reminded one of the scarlet Flamingo, and might well be named *flamingoides*. A first-class certificate was awarded, which it most justly merited. Messrs. Veitch sent also two *Camellias*, Filippo Parlatore and Giardino Santerelli, the former a very beautiful variety, with flowers of a pale pink ground, with finely-formed petals, striped and flaked with deep rose. A first-class certificate was awarded. The latter *Camellia* was not in condition to receive any award; but there could be no doubt about its being a first-class variety.

Mr. Standish, Bagshot, sent *Bletia* sp. from Japan. Although a weakly plant, it promises to be a useful one. The deep purplish-mauve flowers and elegant grassy-looking foliage were much admired, and when stronger plants are exhibited will gain its award. This will probably prove to be a greenhouse Orchid.

Messrs. Henderson, Wellington Road, contributed greatly to the interest of this Meeting, by sending a collection of beautiful plants, among them an *Amaryllis*, with very dark-shaded red flowers, which received a label of commendation. Two red and white varieties of *Primula sinensis filicifolia* received a second-class certificate. We noticed, also, several other *Amaryllids*, *Rhododendron Veitchii*, *Rhododendron Princess Alice*, *Azalea rhododendroides*, *Hymenocallis speciosa*, and many others. A special certificate was awarded by the Committee to this collection of plants.

ROYAL HORTICULTURAL SOCIETY'S READING-ROOM.—This is now open; and we think that no two opinions will be entertained, either as to the comfort and beauty of the room, or the liberal supply of daily and weekly papers upon the table. We think a book should be kept, and an attendant, to ascertain the number of Fellows who avail themselves of this gratuitous luxury.

SEA-KALE.

I HAVE in my garden a bed of *Sea-kale* which, owing to a new treatment, has yielded very abundantly. Last autumn I had the whole bed covered with seaweed about a foot deep. The *Kale* grown under the seaweed is so much finer and more abundant than that grown under pots, that I shall discontinue the use of pots, and thus save great expense. I have had shoots of *Sea-kale* quite tender and white, of from 12 to 15 inches in length, and 1 to 1½ inch in diameter. I have only to watch its appearance above ground, and then to uncover it to the root. Would you recommend a similar treatment for *Asparagus*?—T. W. B.

[So writes a correspondent, and communications like the above are invaluable. Unfortunately, it is only those of our readers who reside near the seacoast that can avail themselves of the seaweed spoken of; but there is no question but it will suit the *Sea-kale* to the very letter. We are not exactly certain, however, about it suiting *Asparagus* so well, although we have no doubt but to a certain extent it will do so. If the soil be light and open the seaweed will be highly useful; if, however,

on the other hand, the ground be stiff and heavy, the effect will not be so good as a quantity of sea sand probably would. We have, however, not had much experience with *Asparagus* so treated. We would rather invite further communications on the subject.]

FUMIGATING WITH TOBACCO.

I HAVE seen no plan more simple and effective than mine. I have an iron bowl with a handle rivetted to it. The bowl is made of good strong sheet iron; the handle is about a foot long. The price of it here is about 6d. I had mine given to me, it being no more than a "waster" before being galvanised. I had about twelve holes punched through around the bottom of it, and I have had it in use about two years, and it looks as good now as it did before it came into use. I think it beats the flower-pot system of burning tobacco, for the pots are so liable to break with the fire that is in them. I put a few bits of wood on the top of the greenhouse fire, and in about ten minutes the wood will be burned down to a glowing heat so as not to cause any smoke from the wood when it is in the house. I damp the tobacco-paper, cut a few laurel leaves with it, put the wood coals into the bowl, turn three small flower-pots upside down, set the bowl on them with the tobacco-paper put on the top of the coals, go out, shut all up close, and in five or ten minutes the house is full of tobacco smoke. There is no necessity for stopping in the house, for the tobacco-paper will burn without any trouble.—W. F., *Wolverhampton*.

ESTABLISHING A ROOKERY—ROOKERY FORSAKEN.

THE means of inducing a number of rooks to colonise any given place is a subject which has already received various answers from some of the many able readers of *THE JOURNAL OF HORTICULTURE*. But, though various suggestions have been given on this point, there are at least two known ways of attaining what in some localities is so great a desideratum; and I give them below, as they have not, I believe, been referred to before in these pages.

If upon any of the trees in or near the place where you would wish to induce the rooks to nest, the nest of either a magpie or a jay can be found, watch (if the former), the nest carefully, until you are sure the old bird has done laying. This being known, procure from some neighbouring rookery five or six eggs which you are confident have not been sitten upon. Having obtained them, watch for a convenient time to climb up to the magpie's nest, and change the eggs when the old birds are absent, which they will be for a long time during the day or two which occurs between the date at which the hen ceases laying and commences sitting. Should the old ones perceive you, proceed in carrying out your object, trusting they may not forsake the nest.

The jay, though quite as good a foster-parent to the young rooks as the magpie, is exceedingly shy of being intruded upon. Should you have in your grounds one of their nests, from the moment you know of its whereabouts studiously leave it to itself until you suppose the old one is sitting, when eggs from some rook's nest should also be procured—but this time, if possible, in an early stage of being set on. Keep them perfectly warm until near the nest, where one should first proceed, disturb the old bird, and, by following it whichever way it went, endeavour to drive it further from the nest. This done, a second individual having the eggs should quickly climb up and deposit them in the room of those already in the nest, leaving as quickly as possible, for of all the birds of which we have had experience none will so readily forsake its nest as the jay. I have known it do so repeatedly where an individual had but once climbed up to it, and this without disturbing it in the least.

Though I here give a suggestion or two, I would trouble some of the many readers of this *Journal* for any further experience they may have in this matter also. We have here this very season lost the rooks which had hitherto been as secure upon the premises as their own new-made nests upon the trees. They have unaccountably left abruptly and entirely, one and all. Can any one inform me of the cause? Some of them had actually commenced their nests this spring, but this was no sooner done than others came and destroyed them. I then acted

upon the suggestion I found in these pages—namely, placing a broom upon the trees. I did more, for I caused to be built-up in one of the very crooks where a nest rested last year an attempt at a fac-simile of a rook's nest. This seems as yet to have been of no avail: no heed have I seen taken of it save once, and this by a rook seemingly larger and darker than the generality of them—a member of their gravest debates possibly; for certainly he seemed to treat this nest with great derision, as was evident by a species of ironical croaking and other strange sounds. Now, as we happen not to have either jays' or magpies' nests here, the thought has occurred to me, Why would not the jackdaws do as well or even better than either, still leaving the broom and man's nest in the branches above?—W. EARLEY, *Digswell*.

P.S.—We have been in the habit of destroying the jackdaws for the last year or two. I think none remained in the rookery this spring. Can this have caused our friends to leave?

CULTURE OF THE GENUS CHOROZEMA.

By PAUL PROGRESS, Esq.

OF all beautiful New Holland plants, the plants belonging to this interesting family are the most beautiful; for, blooming almost throughout the year, and more especially through the winter and early spring months, they contribute to the decorative appearance of the conservatory, or yield a few flowers for the bouquet at a time when they are especially acceptable and valuable. They are also plants of tolerably easy cultivation; at least, those who have learned the rudimentary principles of cultivation will find little difficulty in managing some of the more showy examples of the family. Others, as *C. Henchmanni*, and *angustifolia*, are more difficult to manage; but, before we conclude this article, we will endeavour to make their cultivation clear and easy to all.

The *Chorozemas* are propagated by cuttings of the half-ripened young wood, taken off in July or August, making choice of the short, stiff, and weak, or medium growth, but avoiding twigs of a robust habit. These, after being trimmed, should be about 1 inch long, and must be inserted in sand, under the protection of a bell-glass. In preparing the pot for the cuttings, take care to drain it thoroughly, by filling it half full with potsherds, then place fibrous peat about an inch deep over the drainage, fill up with clean silver sand, and the pot is ready for the cuttings. It is indispensable that a little peat be placed under the sand, as it affords nourishment to the young plants, until they are potted-off, and admits of their being allowed to remain longer in the cutting-pot than would be advisable if they were growing in sand only. After the cuttings are all in, place the pot in a close, cold frame, water when necessary, and wipe the condensed moisture from the inside of the glass twice or thrice a-week. Here the cuttings must remain until they are cicatrised, when they may be removed to a rather warmer situation, the pots be plunged in a very slight bottom heat, and, in a few weeks, they will be ready to pot-off. If it is late in the season—say the end of October, before the cuttings are in a fit state to pot-off, it will be the best plan to let them remain in the cutting-pot through the winter, and to pot them off in February; but if they are fit for single pots in September, then they will be much benefited by being potted-off early.

The plants when sent out from the nurseries are generally from twelve to eighteen months old, and, at that time, should be established in fire-inch pots. Presuming you have selected dwarf, healthy, bushy, well-rooted specimens, prepare the following compost: rich fibrous peat, two parts; leaf mould, one part; turfy rich loam, two parts; clean potsherds and charcoal, broken to the size of horse beans, one part; with sufficient gritty sand to make the whole, when mixed together, light and porous. Time was, and that but a year or two back, when cultivators, to secure porosity, used the soil in rough pieces, and "a down-westward" cultivator, to show the strength of his affection, has recommended pieces the size of a brick. Thus, though this served the purpose of growing the plants rapidly for a short time, they soon became unhealthy, for, the compost being deficient in silicious matter, from the impossibility of mixing the sand with the coarse pieces of turf, it soon became unhealthy, and hence the plants were brought to a premature end, much to the disappointment of the cultivator, whose labours were cut short just at the time when his anticipations were at the highest

pitch. Now, those who understand the mixture of composts pursue an opposite course, and, after selecting their soil, and divesting it of all superfluous and inert matter, they break it into small pieces, so that the whole will pass through the meshes of a half-inch sieve, and secure porosity by the intimate admixture of sand, potsherds, charcoal, or soft porous sandstone broken small. In this way the compost is of the same quality throughout, and hence the roots receive neither check nor change of food; but when large pieces are interspersed through the mass, the roots of the plants either avoid entering them altogether, or by entering them, are subject to constant changes. This is the rock upon which the advocates of "the accumulative," "the one shift," and "the large shift" potting system foundered; they got plants to grow rapidly for a time, but that time was limited, and at the end of it death was the *finale*.

Let us not be misunderstood. In repudiating the rough compost, and the one-shift, we do not disapprove of a large shift, but we would enter our protest at once and for ever against the use of rough compost. Look to Nature: The primæval clod, do we find it like a honeycomb, loose and open like a basket for Orchids? No. But do we not on the contrary, while it is sufficiently permeable for the free ingress of air and water, find that it is firm and compact, and sufficiently solid to prevent the changes of every breeze that blows? In this way progress is comparatively slow, but certain; and the plants, instead of progressing with great rapidity for a time, produce strong, healthy, thoroughly matured wood, and dwarf compact growth, yielding abundance of bloom; and which abide with you for years. But to return to our young plants:—Having prepared your compost examine the roots of the plants, and if they are strong and healthy, prepare a pot two sizes larger, and after draining it properly proceed to pot your plants, placing some of the roughest part of the compost over the drainage, and proceeding to fill up firmly with the finer soil.

The best place for the plants after potting is a close frame or pit, taking care to ventilate freely, but to keep a moist atmosphere, and to shut the frame up for an hour or two every evening, but open it again either partly or wholly before retiring for the night. In this way the plants will make rapid progress, and, therefore, due attention must be paid to stopping the rude shoots so as to induce close, compact, and healthy growth. If the plants progress as they ought to do, they will probably require a second shift during the season, and, indeed, if you wish to make the most of your time, the plants may be kept growing slowly until the winter fairly sets in, at which time they should be brought to a state of rest. In the second year some of the plants will produce a nice head of bloom; but, in order to secure rapid growth, remove the bloom-buds when quite young, and keep the plants vigorously growing through the second season. For potting, no general rule or time can be specified; if a plant is in good health, and the pot full of roots, a shift any time between Christmas and October will not injure it; but never shift a plant until the pot is full of vigorous roots, and take special care that the roots do not become matted before you shift the plants.

Manure water in a weak state may be used with advantage to hardwooded plants of all kinds, but use it with caution, and not more than twice a-week. That prepared from sheep's dung and soot is the best, but it must be used in a perfectly clear state.

Chorozemas are subject to the attacks of red spider, and also to thrips and mildew; the best remedy for the whole of these pests is sulphur and water, vigorously and plentifully supplied. Take a plant and lay it upon its side in the open air, then with a syringe wash it thoroughly, and after watering dust it with sulphur, and repeat the dressing until the pest is destroyed. *C. Henchmanni* and *angustifolia* are the most subject to mildew,

but it may be destroyed by the timely application of sulphur and water.

The following are some of the most distinct and beautiful of the species which are met with in cultivation:—

C. angustifolia.—A remarkably graceful shrub, with long, slender, somewhat scrambling stems, having linear, acute leaves, with recurved margins, and racemes of pretty flowers, of which the standard is orange yellow, and the wings crimson purple. Flowers in March and April. New Holland. Introduced 1830. Formerly called *Dillwynia glycinifolia*.

C. cordata.—An elegant dwarf shrub, with many slender branches, clothed with sessile cordate obtuse, spiny-toothed leaves, and bearing the flowers in more or less drooping racemes. They are orange in the standard, with scarlet or crimson wings, sometimes scarlet with purple. Flowers in March and April. New Holland. Introduced in 1836. There are numerous varieties as regards the colour of the flowers. A fine variety of this species, with a more vigorous habit, and larger and deeper-coloured flowers, is called *C. cordata Lawrenceana*.

C. Dicksoni.—A handsome, dwarf, bushy-growing shrub, furnished with narrow leaves, and bearing a profusion of beautiful dull scarlet and yellow flowers, something in the way of *C. Henchmanni*. Flowers from March to May. New Holland. Introduced in 1836.

C. flava.—A very pretty and distinct form for the cultivator, though regarded by some botanists as a variety of *cordata*. It is of erect, slender habit, with elongate ovate leaves sinuately toothed on the margin, the teeth spiny; the flowers are in racemes, the standard deep clear yellow, the wings much paler, or lemon-coloured. Flowers in March and April. New Holland. Introduced about 1848.

C. Henchmanni.—A hairy shrub, with short twiggy branches, covered with needle-shaped leaves, and bearing numerous axillary racemes of flowers, which are very ornamental, light scarlet, with a yellow mark at the base of the standard. Flowers from April to June, and sometimes onwards till September. New Holland. Introduced 1825.

C. ilicifolia.—A diffuse-spreading shrub, with oblong

lanceolate pinnatifidly spinous leaves, and bearing scarlet flowers, the standard marked with yellow at the base. Flowers from March to August. New Holland. Introduced 1803.

C. ovata.—A handsome shrub, with weak, ascending, winged stems, furnished with ovate-acute leaves, and bearing short racemes of showy flowers, usually scarlet, with the wings crimson. Flowers from March to May. New Holland. Introduced 1830.

C. spectabilis.—A very beautiful, small shrub, with slender, twining, or scrambling stems, the leaves of which are elliptic-lanceolate, obovate, or cuneate, and the flowers pale orange in the standard, tinged with crimson, the twigs being crimson; they grow in long, drooping racemes. Flowers from April to July. New Holland. Introduced 1839.

C. triangularis.—A beautiful, dwarf, spreading shrub, of branching habit, with sub-hastate leaves, pinnatifidly spinous on the margin, and the flowers in short racemes, the standard scarlet, the wings purple. Flowers in March and April. New Holland. Introduced 1830.

C. varia.—A dwarf, compact-growing species, with variable leaves; in some forms broadly ovate, toothed, and spiny on the margins, in others almost entire, and sometimes nearly round in outline. The flowers are very numerous, in short racemes, large and showy, usually orange, with crimson wings. Flowers from April to July. New Holland. Introduced in 1837. The variety called *C. varia nana*, of remarkably dwarf habit, is the best for a limited collection, though there are two or three other very distinct and beautiful forms.—(*Gardeners' Magazine of Botany*.)



Chorozema triangularis.

A FEW DAYS IN IRELAND.
LYONS.

Fig. 1.—FLOWER GARDEN AT LYONS.

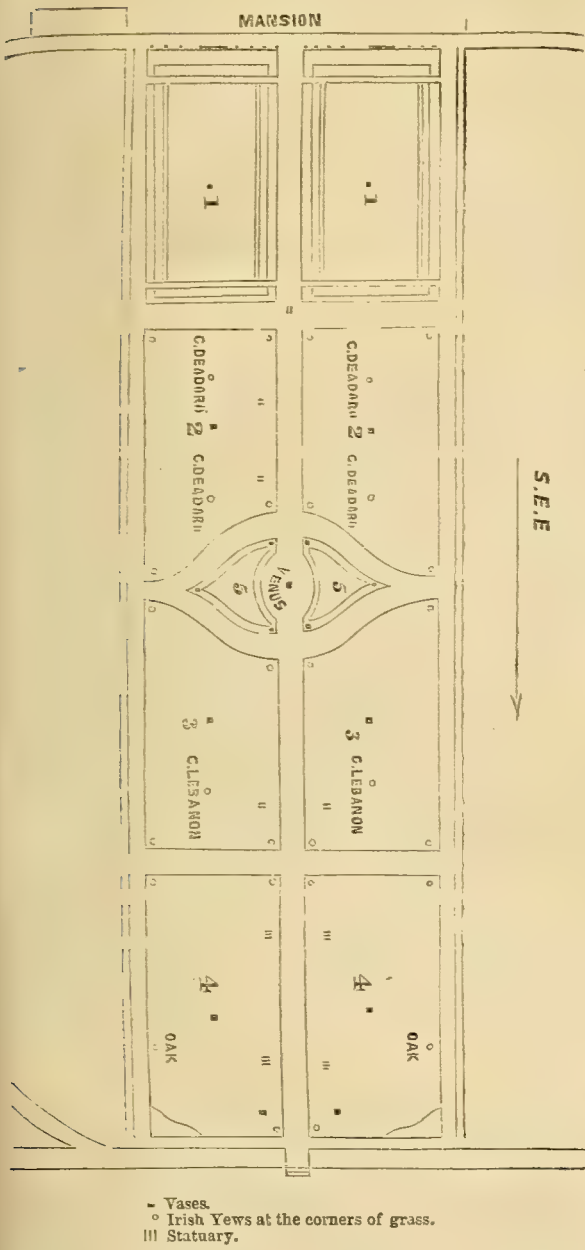
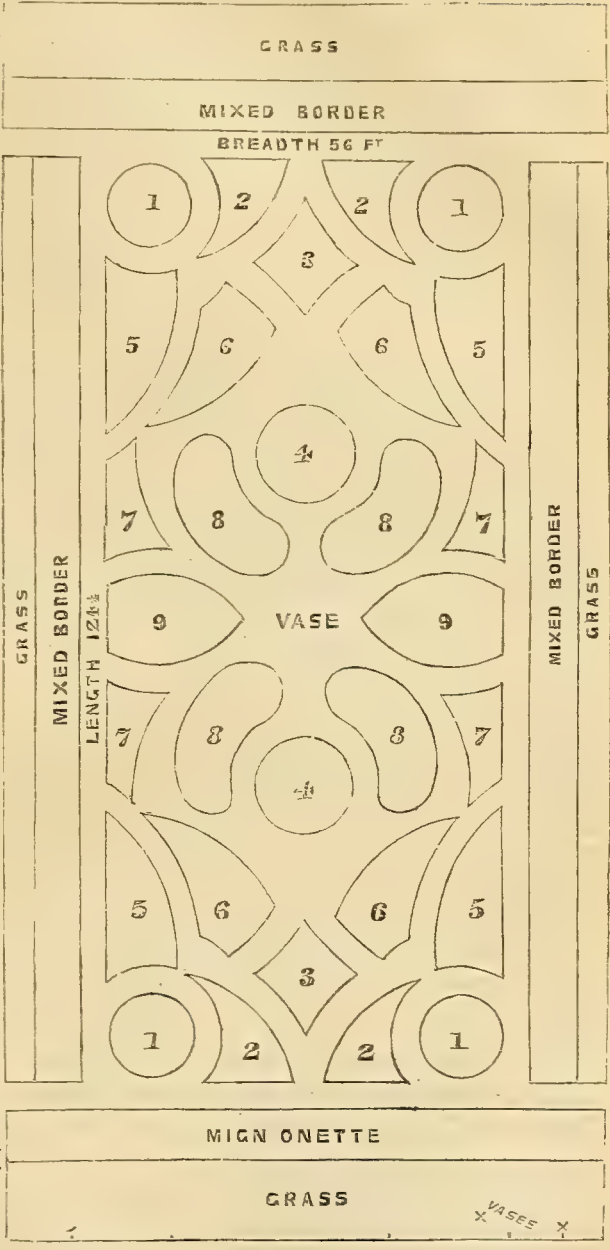


Fig. 2.—PLAN OF PANEL.



THIS very elegant and classic residence of Lord Cloncurry is twelve miles from Dublin and two miles from the station of Hazelhatch, on the Great Southern and Western Railway. The mansion is very handsome, consisting of a centre and wings connected together by colonnades, and is much celebrated for its rich collection of paintings and its gallery of fine statuary. We arrived at Lyons from Straffan by a beautiful approach, but too late in the afternoon to be able to note and appreciate all its distinctive beauties, or to examine and be delighted with the great improvements of superior cultivation and effective drainage accomplished and being carried on in the various farms of more than one thousand acres in all. The noble owner spares no pains, labour, or expense in this direction, and gives a lesson and an example of true patriotism by living almost constantly among his own people, and assisting every effort that has a tendency to elevate them in comfort and social respectability.

The site of the mansion is an elevated platform, but the whole surroundings with their rich plantations being somewhat level, no views of consequence can be obtained from it, unless on the flower-garden front, where after passing over an oblong flower garden 650 feet in length by 198 feet in breadth, which slopes down to a noble clear lake of forty acres, the eye rests on the beautiful hill of Lyons on the opposite side of the lake, which rises to the height of 680 feet, and from the top of which fine views must be obtained of the surrounding rich level country. From the flower garden glimpses are obtained of massive ruins on the side of the hill, the remains of an old castle or monastery, and possessing an extra interest as being near to the burial place of the family. We could not help thinking how imposing, nay, almost how impregnable, a castle situated on the top of such a hill would have been in the days of raids and forays, when might was considered to be more than three parts out of the

four of right, and when nothing was thought, in these "good old times," of the exhausting labour so imposed on serfs and vassals, as to send them prematurely out of that world which had been to them a scene of toil and of woe. Neither could we help reflecting how grand and picturesque a castellated mansion would have looked loftily placed on the bosom of that hill, commanding such a rich distant view of the surrounding country, and near at hand a series of terraces down to the beautiful lake. In these days of quiet and social amelioration, when comfort is even more important than security, and easy access to water, corn, and fuel more desiderated than even the most splendid views, we gradually become reconciled to the mansion of Lyons being situated where it is, as we feel there is an advantage on the score of prudential economy in looking over the lake up to the hill, instead of looking down from a rich colonnade near its crest.

Owing to the lateness of our visit, we will chiefly confine ourselves to the peculiar features of the large flower garden, the management of the fruit trees, and the mode of heating the forcing-houses; and thus, whilst touching on some of the distinctive features, help also to give variety to these sketches.

The flower garden, as already indicated, is bounded at one end by the mansion and a range of elegant vases, and at the other end by the splendid lake. The two sides are bounded by lawns meadows, and plantations, the meadow being one of the things a gardener would wish elsewhere, owing to the weeds that are apt to come from it. This oblong square is divided by a walk down the centre, 21 feet in width, and bounded on the sides by walks 10 feet in width with their suitable verges, &c. Three transverse walks at something like equal distances apart, would throw the whole space into four pair of oblongs; but a fine statue of Venus on a lofty pedestal being placed in the middle of the central walk, and equidistant from the mansion and the lake, the necessary curve round it breaks what might have been the monotonous straight lines of the oblongs, and secures a pair of curved triangles in addition to the oblongs, as seen at 5, 5, in *fig. 1*.

We here met with our new and very intelligent friend Mr. Lind, who kindly detailed to us many changes and improvements he proposed effecting, though the garden, as it was presented to us, had many charms, and chiefly for two reasons—first, because in combination with the new grouping system, there was full play given to the older and, perhaps, more simple and natural arrangement of flowers; and secondly, because each pair of oblongs was planted not only so as to pretty well balance each other, but so that each pair should be distinct and conjure up different associations.

Thus beginning at the two squares next the mansion, we find that the beds are grouped with bedding plants and separated from each other by walks of gravel, and that in addition each of these oblongs is surrounded by a border about 6 feet in width, planted chiefly on the mixed system with early bulbs in spring, numbers of bedding plants in summer, and having besides a number of fine plants of Lavender along the centre, and the sides well supplied with huge massive plants of evergreen Candytuft, *Aubrietia purpurea*, *Arabis verna* and variegata, and *Alyssum saxatile*, &c., which give the border a very rich gay appearance in April and May, and a furnished look in winter.

It would, therefore, be a pity to alter the arrangement of these borders, though we quite coincide with Mr. Lind, that no sticking-in of abundance of bedding plants during summer will ever cause these borders in autumn to vie with or equal the splendour of the grouped beds. If the labour-power would permit, we would reduce the fine old plants to more manageable dimensions, remove them to a reserve ground in the end of May, and ribbon or parterre these borders so as to be of a piece with the beds in autumn. The beds in the two squares 1, *fig. 1* have also rows, &c., of Tulips, Crocus, and Snowdrops in spring; and with the exception of Roses, &c., were filled with bedding plants in summer; and we quite agree with Mr. Lind in removing even Roses from such a parterre, as do what you will you cannot get them to correspond with massive beds of bedding plants in the end of summer and autumn. *Fig. 2* is a plan of one of the squares of *fig. 1*, and was thus planted:—1, all Scarlet Geraniums, with *Humea* for centre; 2, *Verbena venosa*, which generally grows strong in the moist climate of Ireland; 3, one bed with Roses, Perpetual and Moss, with a belt of *Salvia patens*, the other bed belted with a violet *Verbena*; 4, one bed Roses and *Salvia patens*, the other Roses and Lord Raglan *Verbena*; 5, all *Lobelia fulgens*—splendid beds in autumn; 6, two beds of

Amplexicaulis Calceolaria, and two beds of Golden Ball *Calceolaria* in fine order; 7, all *Manglesii* Geranium; 8, planted in lines, middle *Perilla*, then white *Alyssum* and *Tropaeolum elegans*; 9, 9, *Verbena venosa*. We think these large beds would have been improved by mixing with Flower of the Day or old Scarlet Variegated Geranium. If the borders were ribboned in straight lines, we should like more of the beds to be mixed, or edged, and that would increase variety; but then there should be a different style from that adopted in the two squares 2, *fig. 1*.

In the couple of parterres, 2, 2, there were fine beds of Roses, and a fine horseshoe bed of *Berberis aquifolium*, which looks well summer and winter. The main beds, however, are filled with early hardy bulbs; and then, as these decay, the beds are filled with bedding plants. Mr. Lind intended grouping all these beds in future; and as they have no border round them, a different style of planting should obtain from that adopted in No. 1.

The two beds, 5, 5, round the statue of Venus are filled with Roses, and, the row next the Venus are pillar Roses, and festooned together; then follow standards, half-standards, and dwarfs, so as to form a blunt pyramid of Roses. The break in the masses of flowers here is very pleasing, and prevents one being overpowered with dazzling colours, and there is no chance of wearying from the monotony of the splendour presented.

The pair, 3, 3, is on grass, and the parterres may be called transition gardens. Here again were beds of *Berberis* and *Hypericum* (St. John's-wort); fine beds of China Roses; Dahlias; mixed bedding plants in lines; herbaceous plants in varieties; Sweet Peas; Hollyhocks; and beds of *Phloxes*, &c.; putting one in mind of, and in love with, our old-fashioned flower-gardening. Mr. Lind contemplated a better arrangement of many of the beds, in addition to Hollyhocks, Dahlias, *Phloxes*, &c., so that the beds should be gay all the year round—such as mixtures of *Delphinium formosum* and *Verbena venosa*, both of which stand the winter there well, and the *Verbena* would just be coming strong when the *Delphinium* wanted pruning-in.

The pair, 4, 4, are chiefly old herbaceous plants and deciduous shrubs and trees. Among the latter are some fine old *Laburnum* trees, which are stumped-in close every year, and yet bloom most freely on the young wood, and, what is more singular, produce endless sports, generally having three or more distinct forms of wood and colours of flower on every tree—the large yellow and the small yellow, and the pink and purple as well. Mr. Lind playfully hinted whether inquiring into the causes of such eccentric variation might not be a pleasant relief from the vexed question of the cause of variegation in plants. We understood there was to be a change in the parterres, 4, 4, by throwing the beds into grass near the lake, which we feel sure would be a great improvement, especially if graced with a few evergreens and Conifers, as there are plenty of beds to require an immense number of plants to fill them well. The Irish Yews at the corners of the parterres come in well. The combination of the new grouping system with the old mixed system is very pleasing to a stranger, more especially as the systems are kept separate and distinct. The vases and statuary give a light and elevated appearance to the whole.

We just saw enough of the kitchen garden to be satisfied that there was a good supply of all vegetables for family consumption; but the fruit trees having arrested our attention, and Mr. Lind having had much practice in root-lifting and root-pruning, &c., we will now devote a short space to that subject. The first we shall refer to were fine-looking Apricots, with short-jointed, well-ripened wood and prominent buds. Previously the wood did not ripen well. On examining the border it was found to be well flagged 3 feet from the surface. The soil and the roots were dry; but the latter were deep, and in a sad state with warts and suckers, from deep cultivation of the borders. The warts and suckers were carefully removed, the roots carefully traced out, the lower soil well firmed, much of the surface soil removed, and the trees were just not raised altogether, 2 feet next the stem being left, and the roots were nicely packed in new soil a foot from the surface.

Then, Pear trees were greatly improved by the following process. They had been root-pruned more than once—that is, a trench had been dug round the stem, at 3 feet from it, and all roots cut through. No attention to drainage being given, no encouragement to surface roots, the new roots formed went down straight as a line after moisture, into the subsoil, and flower-buds and good fruit were things rather to be thought of than obtained. These straight-downward roots were carefully raised as far as

possible, a foot of open drainage was packed underneath, and the long roots brought near the surface, as in the case of the Apricots, with marked success. A similar course was adopted with Plums and Peaches. In such a moist climate, dryness at the root near the surface, and frequent raising and root-pruning young trees, are great essentials to success. One of our old tutors in Staffordshire lifted his Peach trees every other year, and thus, though the trees were rather small, secured plump buds, stubby wood, and freedom from canker and insects. Mr. Lind does all that work, if possible, early in autumn before the leaves begin to change much, and thus accelerates the ripening of the wood, and finds an advantage instead of a disadvantage the following season. If he commences in the beginning of October, he shades the trees for a short time in bright sunshine, and uses the syringe pretty freely, to prevent the leaves falling prematurely, and thus the fine new roots will be running in the fresh, warm, surface soil, before even the leaves all fall.

R. FISH.

(To be continued.)

DOUBLE LESSER PERIWINKLE.

I SEND you by this post a box containing flowers of the double blue Vinca minor, hoping you will inform me, for my own satisfaction and also for that of my friends, if it is a plant in general cultivation. I do not remember having seen it before this year.

It is one of the most beautiful plants I ever saw for early spring blooming. The plant I took the enclosed flowers from is growing on a block of wood on the lawn, exposed to all sorts of wind and weather, and has been producing hundreds of blooms since the middle of January last. It has now quantities of beautiful expanded blooms upon it, and will evidently continue to flower for some time to come, there being large numbers of buds daily making their appearance. The plant grows very compact and quite circular, and, I think, would be found an admirable acquisition for suspended baskets in the conservatory, or cold greenhouse. The shoots are about 2 feet in length, of slender habit, and produce racemes of blooms from the crown of the plant to the extreme point of the shoot. The foliage is small, of a bright dark green, and beautifully contrasts with its lovely hepatica-like flowers. I have been an admirer of spring-flowering and rock plants for many years, but I do not remember any plant more deserving of general cultivation.—HENRY W. BROWNE, Boughton Street, St. John's, Worcester.

[The specimens, abundant in number, sent by our correspondent, we consider a very desirable acquisition, both for rock-work in the open garden and for baskets in the conservatory, if the plants will flower true and as abundantly there. In some old florists' catalogues we find a double purple variety of the Vinca minor mentioned, but we have no remembrance of it in modern catalogues.—EDS. J. OF H.]

GARDENERS' SOCIETY.

I MUST thank your correspondent "G. A." for bringing the above subject before the gardening public, and I hope it will be well responded to, as I know the want of unity in the profession has often been felt and commented on by numbers of gardeners with whom I have come in contact. Could not the Gardeners' Benevolent Society be extended to embrace the idea in a great measure?

Two or three years ago the education of gardeners was criticised rather severely in the columns of a contemporary, because some of those hybrids between a groom and gardener applied for a situation in letters containing some wretchedly bad spelling. This was too hard upon gardeners as a class, and would not have happened if public examinations in which first, second, and third class certificates were given, had been the order of the day. Should such be adopted, we should find the right man in the right place more frequently than we do now.

How often do we see the man who has worked his way upwards from the stokehole through different gradations to the position of confidential foreman, after qualifying himself in his leisure hours by studying vegetable physiology, botany, chemistry, &c., and another, without study, and with half the years of practice, but with good private interest, gain the position in society the former should have held? If a certificate were required from a recognised board of examiners, abilities would become more

prominent in the great competitive labour market. Again: Gardeners, from the very nature of their employment being much isolated from their brother gardeners, particularly in country localities, the stated times of meeting at head-quarters of sub-districts would tend to bring them more together; and the exchange of ideas could not fail to be beneficial.

Also, if a fund for sick and disabled members could be added so much the better, as it is very lamentable to see a once-respectable man in his old age come to want, as is often the case. Gardeners when young are not thought capable of filling a head place, consequently they have not the chance of providing for a rainy day so well as persons engaged in many other trades and professions.

I will conclude by hoping that the importance of the subject will cause it to be well ventilated.—J. A., *Hants.*

[We are enabled to state that steps are being taken to effect the establishment of a "GARDENERS' SOCIETY."—EDS. J. OF H.]

ANIMAL HELPS IN GARDENS.

THE HEN.—A fowl that devours greedily all kinds of insects in the egg, larva, or chrysalis state, and in most cases the mature insects. Woodlice hens are partial to. I have known a single hen devour a gill (quarter of a pint), in a few minutes, which I had caught by the simple and old-fashioned contrivance of putting a boiled potato in a 32-sized flower-pot, and placing a little hay loosely over it in the pot. This, along with pouring boiling water down the walls of a Mushroom-house, effectually eradicates the troublesome woodlice. When it can be done, hens will speedily clear dung of woodlice, and a large quantity of larvæ or maggots more or less present in dung. They not only catch all they see, but they search with their feet for more.

Were it not for their ardour in searching for prey with their claws, and scratching such deep holes to cool and clean themselves, I should have no objection to their entering a garden; but I have tried them there, and was glad to be free of them. They scratch anywhere, and never in the right place; destroy seed-beds completely, eating the seeds; and they will pull currants off the trees for mischief, and anything that looks like "grub" they tamper with. In return, they make quick work and good of snail or slug eggs. I have no proof that they devour the perfect insect, though I have watched and put them in their way.

In a garden they are a nuisance, and do more harm than good. I have known people wrap bantams' claws in a kind of leathern bag, so as to make them web-footed like ducks, and I can vouch for their then doing good service. A couple even then are enough on an acre of land; and they must be fed twice daily, and a supply of water provided.

DUCKS.—These are wholesale devourers of insects, the slug, and beetles occasionally, but not when other food is plentiful; the larvae, however, they gulp down should they put in an appearance near the surface. They also destroy wireworms and dew-worms, but seem to respect them when fecundating in July; and they put their bills into Strawberry-beds, breaking some plants off or trampling them to death and into Thrift and Box-edgings, and mostly suck in something, as often bits of sand and quartz as anything else. In reality they are useful in a garden, and of great service to the gardener. In point of damage they break succulent plants, as Calceolarias, and sodden the ground by their putting some four pounds pressure so frequently in one place, and the dirt made by them is not pleasant to the eye.

A couple of ducks are enough in a garden of one acre, and they may rear their young until five weeks old, when they must be put out of the garden altogether.

It is advantageous to have a small pond in which they can swim and wash themselves; but it is not absolutely necessary, for a shallow galvanised basin (ours is 2 feet by 6 inches), will answer the purpose of drinking, a wade-through, and a wash besides. They must be fed once daily in the morning in summer, and twice daily in winter during severe weather. The reason they are not to be fed at night is to make them forage.

Where there is the convenience of a pond, ball, pail, and other small breeds are not only ornamental but useful; and as they are shyer than the Aylesbury, Rouen, &c., their excursions are taken during early morn and night, but they never wander far. Even they must be fed at least once in twenty-four hours.

WATER HEN.—Shy, but insects and aquatic grasses form their

daily fare. A pond and an isle with undergrowth are all they require. Geese are worthless, and swans are little better.

WATER RAT (*Arvicola aquatica*).—"Nay, it eats young ducks and goslings," say old wives. But for once the old wives are wrong. The water rat is a sportive inoffensive creature—a water-insect and aquatic-plant-devouring animal, valuable for eating grasses that choke-up brooks and pools; and it, with wild ducks, will clear any stream of Anacharis—that plague which threatens to close the angler's sport. By-the-by, we had some Water Lily (*Nymphaea alba*), from Cambridgeshire, out of the sluggish streams there, and planted them in a pond. To our mortification the Anacharis soon filled it; but thanks to the Normandy ducks, they cleared it sharply, not forgetting to destroy the Lilies also to the root, but they come up again.

PEA FOWL.—A swaggering gentleman, and a coward and great bore. It is of no use trying to grow anything where there are many of them; yet they devour snake and viper eggs, the young and the mature reptile also.

GUINEA FOWL.—Too shy and tender for a garden, not given to scratch except in basking-holes, but of little value to the gardener. Though they are large insect-consumers, yet they partake too much of the pheasant and partridge to be of much utility.

OWLS.—Very valuable; but who can pinion one, and put a false wing on? Very, very useful in a wild state, yet useless when caged. I have heard gamekeepers assert that owls take young rabbits and partridges. Be it known that they do no such thing. I have watched them for hours when alone by my bothy door, and though I have seen a covey of partridges (and young enough), and young rabbits in the paddock adjoining a wood; and the invariable chosen prey of the owl (horned, the largest, and screech owl too, not excepting the white), was a mouse. Happily the worthy owner did not believe keepers to have much knowledge of owls, or they would soon have been swept away. He spread his wing alike over the fowl and brute as he did over the fatherless children and widow. Owls, though solitary birds by day, court rather than shun the habitations of man when protection is afforded them. The screech owl harboured in an unfrequented tower over the laundry at the place above alluded to, and I have known them shelter in grottoes, and, in one instance, in a church steeple. The horned owl hides itself in hollow trees, and the barn owls also select a secluded resting-place where they breed, and to see them sally forth at night in search of prey for their young is an instructive sight. To see them skin a mouse before it is given to their young may cause a shudder; but, their catching a rabbit or partridge is what I should very much like to witness. The food of owls is the smaller quadrupeds of the mouse tribe, but rarely birds and never are they poachers of game.

HAWKS.—The sparrow-hawk is a capital tenter of the smaller birds, for though they may mock him in a pinioned state, yet they dare not follow their nefarious practices, or Mr. Hawk puts in his veto. A basin of water and raw meat is all the hawks need. I have tried none of the larger kinds.

THE CUCKOO is a first-class insect-consumer, and a scarer of small birds. Cuckoos may be reared with boiled eggs and sopped bread. But do not pinion one; rather clip its wing, and towards autumn if it cannot fly clip the other and let it fly to other climes, to return again in spring.

GUILLS.—I have had three kinds in gardens. The grey, white, and black-headed, and a smaller kind under the name of a tern. The black-headed are good, the grey next, and the tern best of all. The tern is about the size of a jackdaw, and becomes very tame. When the gardener is digging it follows, picking up worms, slugs, and grubs. The gulls never become very tractable, but they are continually on the look-out for snails, worms, insects, and mice. The gulls are the only bird that I know with a pointed beak that devour animals. They will soon clear a garden of mice, and they do not object to take a sparrow on the sly. A sparrow they devour whole, head foremost, and they relish young thrushes and blackbirds. In fact their gluttony is unbounded; but as their food is insects and small animals they are invaluable to the gardener. Occasionally they will take the heart out of a Cabbage, but beyond that they do no harm in a garden. Two are enough for an acre.

Gulls require fish when young to rear them, and anything afterwards you please to give them, cereals excepted. They should have a basin of water to drink at, wade through, and wash in; but a pond they are averse to, on account of the fresh water being colder than their native element—sea water.—G. A.

GISHURST COMPOUND.

MR. WILSON says that he has proved that 8 ozs. to the gallon might be applied so as not to injure buds, but I have found out it does so to a great extent; for I dressed the trees in an orchard-house about the last week in December, using 8 ozs. to the gallon, and on some of the trees it took a great effect. From some of the Peaches three-parts of the buds fell off, and, I think, there is hardly enough left for a crop. The Pears seem the same, for about half the buds became black and fell off. The Cherries, and Plums, and Apricots do not seem the least injured. I brushed them all softly with a small painter's brush.

I am not the only one about here that it has taught a lesson to. The trees were all in pots, and have done very well before every year. I will take good care to use no more Gishurst. I think some of your worthy friends, such as Mr. Rivers and a whole host of others that so highly recommend it, could not have thoroughly proved it. I believe that I used it the same as directed in this Journal time after time—8 ozs. to the gallon for trees at rest.—S. P.

[We think you have formed too hasty a resolve against the Gishurst compound. This winter has been so mild, that even in December Peach trees under glass had their blossom-buds as much swollen as they are usually in February. Wait until the end of the year before you add a Mede-and-Persian law against the Gishurst to your gardening code.—EDS. J. OF H.]

EXTRACT from annual report of the Van Mons Society of Belgium. Printed at Brussels. Tenth publication.

"In 1859 appeared for the first time the destruction produced by the Scolytus, ravages which were not perceived till then, so little was it thought that this insect would attack Pear trees. In cutting-up one of these trees, the inside was found entirely perforated, and Scolyti were found measuring 6 to 7 centimetres long, and 3 to 4 centimetres in circumference. Various remedies have been tried to destroy this hidden enemy. The trees have been stripped of their bark to the inner rind, and washed with milk of lime; but what has produced the best result, is a composition which we received from Scotland under the name of 'Gishurst compound,' which, diluted with a certain quantity of water, was introduced with the small syringe into the perforations caused by the Scolyti, and destroyed them."

WORK FOR THE WEEK.

KITCHEN GARDEN.

EVERYTHING connected with this department should now be kept in good order. Take every opportunity of eradicating weeds; hand-weed where practicable, as it more effectually answers the purpose than hoeing and raking. Cut the Box-edgings and keep the walks well rolled. *Basil*, a warm sheltered spot may now be chosen to sow in the open ground; but being rather a tender annual, it is generally the best plan to sow in pans or on a slight hotbed and afterwards to plant it out. *Beans*, earth-up the early crops, but before doing so lay a little soot close to the stems. Timely earthing will also prevent the wind damaging them. *Borecole*, make a sowing for the first crop, what is commonly called the Scotch Kale is the best variety. *Broccoli*, most of the varieties may be sown about the end of the week. By sowing early there is time for a second sowing in case of failure. *Cabbage*, pull up any of the plants that are running to seed in the autumn plantations, and fill up from the reserve-bed. At the same time stir the soil between the plants and earth them up. *Carrots*, thin out those in frames, and give a plentiful supply of water when dry. In sowing the main crops put in the seed rather thickly, as it is more liable to fail than any other kitchen-garden crop. *Celery*, the main sowing for the winter crop should now be made. Continue to prick out from the early sowings. *Dwarf Kidney Beans*, a sowing may be made on a warm sheltered border where the soil is favourable to early crops, or a sowing may be made in pots for planting out as soon as all danger from frost is over. *Lettuces*, give air to the plants in frames night and day in mild weather. Loosen the soil about those planted in the open ground. *Onions*, sow the Silver-skinned on a poor piece of ground to produce picklers. Plant into beds the autumn-sown or those sown in boxes in the early part of the year. Draw shallow drills, and lay the roots of the plants in them at regular distances, after which cover them with fine soil. *Peas*, sow any approved sorts

for succession, but after the early part of the season, Knight's Dwarf Green Marrow should be sown as a delicious sort, but other and quick-bearing sorts may be sown when a large quantity is wanted at each successive gathering. *Radishes*, keep up a succession by sowing a few once a fortnight. *Sea-kale*, remove the covering when the produce is gathered. If there is any yet remaining to be covered let it be done before it grows much. *Turnips*, thin out those sown in frames, and give them water when necessary.

FLOWER GARDEN.

Patches of showy hardy annuals should now be sown in vacant places, which usually are to be found in herbaceous beds and in borders of the shrubbery. Double Poppies of various colours, Lupines, Sundowers, African and French Marigolds, Clarkias, Gilias, Erysimums, Collinsias, Silene, and Nemophila are excellent for that purpose. *Campanula stricta* appears a desirable plant for flower-garden purposes; its colour is light blue, height about 6 inches. This, together with *Salvia chamædrioides*, as well as the blue *Anagallis*, should be cultivated in abundance, particularly where beds are encompassed with gravel, and now that the *Verbenas* produce so many warm-coloured flowers. Cultivate the different sorts of *Mimulus*; several of the strong-growing sorts do well for damp situations in the shrubbery, and, from their warmish colour, add apparent depth to the scene. Plant *Gladioluses* and *Ferrarias*. Plant evergreen shrubs if you are obliged, and, if so, take care to let every fibre be carefully preserved; have large balls of earth, and holes dug much larger than the ball will fit into. Attend well to watering, and fix the stakes to prevent the injurious effect of the shrubs being wind-waked.

FRUIT GARDEN.

The following is a method of which many may avail themselves to obtain Grapes nearly equal to those grown in the most approved structures. All that is necessary for the purpose are established Vines against walls, a common hotbed-frame or two having three or four lights, a load or two of dung and leaves, and a few plain tiles. If the Vines are pruned, which they should have been before this time, make a bed of leaves and dung of the size of the frame, about 4 or 5 feet high, and 2 feet from the wall; use the short dung at the top, and put on the frame immediately. After the heat is up fork it up a little once or twice; and if it become dry, water it slightly. After the strong heat has somewhat subsided cut notches in the back of the frames, and bring down the branches of the Vines. A trellis should then be fixed inside at about 6 inches from the glass, to which the Vines must be tied. When this is completed close the frame, and let it remain unless the bed is very hot, when a little air must be given until the buds begin to push; after which they must have air according to the state of the weather. When the buds are about breaking, the dung should be covered with tiles or slates to keep down excess of heat and steam. When it is necessary to thin the Grapes the lights can be drawn off.

STOVE.

If any plants in this structure require propagation seize an early opportunity. Keep a moist atmosphere with a sweet and regular circulation of air, using abundance of water about floors, and syringing frequently air-plants or others suspended. Shut up with a solar heat, if possible, of 80° towards three or four o'clock.

GREENHOUSE AND CONSERVATORY.

The regular admission of air, qualified in amount by the state of the weather and the period of the day, will not only be advantageous to the health but conducive to the preservation of the blossom of the many elegant plants which decorate the conservatories at this moment. Continue to shift those greenhouse plants which require it. The process of shifting is generally as follows:—A few potsherds to be placed at the bottom of the pot, and then a layer of the rough turfy portions of the soil. When the plant is in hand a portion of the old soil is carefully removed by the fingers, or by gently patting the sides with the hand so as to loosen the points of the fibres if they are at all matted. Then place the plant in the pot, so that the top of the old ball of earth may be level with the rim of the pot; fill-in with whatever soil is most suitable in a rough state, and gently but firmly press it down, finishing-off quite level about half an inch below the rim. Give a moderate watering with a rose to settle the soil about the roots, and the operation is then finished.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

GAVE a little manure water to Broccoli beginning to swell. Sowed succession Peas and Beans, also Spinach. Regulated and made up herb-beds. Planted new beds of Mint, as on cold stiff soils it is apt to give way if not frequently renewed, and a gardener might as well be without Parsley as without Mint. Sowed the main crop of Parsley. Planted-out Peas from boxes, and staked as proceeded. Watered Cauliflower out of doors and in hand-lights, that in the latter growing fast, and almost threatening to be in as soon as some of the Broccoli. Planted a small bit more of Potatoes under cover; have still a few late ones to plant out. Pricked-out Cauliflower and Lettuces from a Carrot-bed under glass, which will enable us to keep this second Carrot-bed closer to get them in sooner. Planted the Lettuce at the foot of a wall, so as to succeed the winter ones, now very nice.

Planted-out a piece of Fraser's Batavian Endive to obtain a little seed; this being the very best among the broad-leaved Endives for compactness and hardness—in fact, for sweetness, crispness, and hardness it beats all other Endives hollow. We have had it in April and May on a north border looking like huge pats of yellow butter, and almost as sweet, by merely placing a 24-sized pot over each plant, and stuffing the hole with a wedge of moss. On applying to Mr. Veitch for a pinch, he replies, "Sold out," but that is just a reason why amateurs who grow little, and like to make sure of a salad in winter with but little trouble, should try and obtain a little pinch. It is sure to be scarce for a time, though it is now a number of years since our good neighbour distributed it. If any one should save a few plants for seed they will be sure to be disappointed if they do not net shortly after the plants show flower, if there are such things as birds near them. Two years ago the rascals got under our net, and ate up almost every seed in the milky state. Let them alone for finding a good thing! A few Lettuce stalks that we cared nothing about were untouched—we say cared nothing about advisedly, because in most small gardens it is cheaper every way to buy seeds that can be depended on from a seedsman, instead of bothering and saving your own. We have often seen plant-houses and fruit-houses a perfect mess for months from seeds drying and perfecting in them, and a few shillings, less after all than the worth of the labour involved, would have bought all that was wanted. Of course, if there is a *must be* it must be; but in these days of the division of labour, seedsmen by trade can save good seed cheaper than the man who has myriads of other things to attend to. In rather new varieties or where it is doubtful if the real Simon Pure can be obtained, there may well be exceptions; but all our great seedsmen, even as a matter of trade, are as anxious to send out only the best articles, as their customers are to receive such.

This blanching of Endive has reminded us of the Sea-kale we mentioned the other week, placing rather large common pots over some in the open air, with a little earth round the bottom of the pot, and turf across the top. Well, on looking at it yesterday to see how it would come in to succeed some under litter, we found it was from 2 to 3 inches high, and would be long enough in another week; but it was coming neither white nor green, but a sort of go-between purplish, and all from a very simple cause which we never thought about. The heat of the sun had dried and shrunk the turf, and thus a little light reached the Sea-kale, which prevented thorough blanching. Had we stuffed a plug of litter or moss in the hole we should have had it white enough. Pots of any size being now wanted for potting, for sowing seed, and for pricking-out seedlings, we managed to obtain a few small oyster-barrels instead, which will do better than pots, especially with a turf on the top of them, and hanging over all like the large blue bonnet of a Highlandman, so as to prevent the sun shrinking the staves, for that would let the light in. Covered up, also, several rows, showing fine heads, with a ridge of ashes 6 inches deep, and a little dry earth from between the rows over it; and in this case, as soon as the smallest bit of Kale appears, the head will be in prime case to cut. There is nothing better for obtaining delicious Sea-kale than a covering of 8 inches of bog earth, and cutting when 6 inches long, which can be easily known by seeing the little hillocks made by the growing Kale. Sowed a lot of Sea-kale seed in rows 18 inches apart. This, when thinned out, is a more profitable way of growing it than in beds. In good light soil it will be good stuff for forcing the first winter. In cold soil on a north exposure it will require two summers.

Dug ground for sowing more Asparagus, as, when much is

forced, there is no other plan for keeping-up a succession. Forked the soil, and earthed-up Cabbages, and uncovered Potatoes during the day, now about fit for table, those in pots lasting out well. Watered Mushroom-beds; bearing still pretty well. Ought to have made up another bed; but just now there is such a demand for extra heat from the little fermenting material that falls to our share, that we could not spare any droppings.

FRUIT GARDEN.

Some of the Strawberry-beds, having more rough leaf mould placed between the rows in winter than they could manage, had the ground hoed, and the rough extra material raked off and put in the bottom of trenches that will come in for Celery some day. Daubed buds of Cherries, Pears, &c., with a little weak Gishurst, and soot and lime, partly to keep insects from them, but chiefly to keep the vermin of birds from them. We had a row of dwarf Plum trees as fine a sight as ever we would wish to look upon; but the fruit will be few and far between, as scarcely a bud was left, even though a net was thrown over them. One dark evening some boys batfolded and caught from eighty to ninety of the gentry, and we asked no questions as to what they did with them. It is singular with what pertinacity they will keep to some things. Some other Plums were not touched at all, and the same as to vegetables. Two rows of fine Marrow Peas had to be sown again, and now, in addition to trenches along the rows, a narrow net is placed above the branches, and still through net and altogether you will see the marks of their bills at the young sprouting Peas, whilst there seem to be much more tempting rows of other kinds close at hand, which have never been touched. In this one would almost think there was more than the choice and selection of instinct. And yet, for all that, did they moderately only take their share, we would willingly forget and forgive, and even do something more, so delightful now are their sweet notes morning and evening. Regulated Strawberries less or more every day, as when fruit is gathered every day, besides watering, some pots will require taking out, and some others taking in. Others of our attendants knew something in the way of selection as well as the birds; for if a slug or snail has scooped out a small hole in a Strawberry, there is every probability that it will be in the best Strawberry in the house—just such a one as you would like to have as the crowner to a dish. There is no method of getting hold of these gentry except taking a candle at night and looking for them, and they will be easier found if there should be such tempting baits laid down after work hours as a handful of brewers' grains, or some buttered young Cabbage leaves.

Further disbudded trees and thinned fruit in Peach-house, and for a fortnight have seen no more of the brown beetle. We found it taking hold on some small trees in pots in orchard-house. The trees were placed in a small box-house; half a bushel of bruised laurel leaves were placed on the bottom of the box, and the door shut close, and next morning there was not one insect alive. For plants that we can put into this box, we have found no kind of insects that can stand the fumes from the laurel leaves; and one advantage is there is no smoking or dust of any kind thrown on the plant. A slight skiff with the syringe afterwards makes the plant clean of all vermin. There is just a chance of some eggs remaining in a corner. We think for such purposes, having a stout calico cloth painted to make it stiff to keep in fumes, and then wrapped round a plant, a few laurel leaves would clear them more safely, often, than smoking would do; but a small plant could thus also be easily smoked. The great drawbacks of cleaning plants by syringing with any washes are, that unless the liquid is clear a sediment is formed, and the insects knocked down are apt to crawl up again.

Potted Vines, smaller and larger. Regulated Figs swelling fast, leaving those out of doors still covered with laurel twigs, and thinned Grapes, reducing the number of bunches as well. Planted out one bed of strong Melons; and the second bed having been filled with Verbena cuttings, in semicircular drain-tiles, which were struck, removed them, forked over the bed, and introduced the soil to heat ready for planting. The minutiae of our mode may be interesting to some. Our frames being about 10 inches deep in front and 20 inches behind, the most of the soil should be beneath the level of the bottom of the box. For this purpose the frame stands on a wall or ridge all round, a foot above the bottom of the bed. Supposing the bed inside to be 5½ feet wide, a space in the centre of 2½ feet wide is made deeper still to the extent of 6 or 8 inches or more. A slab is placed behind and in front of this; and the extra dung is placed

at the back and in front of these slabs, and between them and the sides of the frame. This leaves a well or gutter in the centre, between the slabs, of 2½ feet in width, and 1½ foot in depth for soil. We find this all the length of the bed is generally enough for Melons. When filled with earth the edges of the slabs are covered, and a couple of inches or so spread on the dung, back and front. If we wish to give more earth we have only to lift up the slabs and take out the dung at the sides, but we very seldom do so. We think that the plan has two advantages. The earth in the centre is kept warmer with a less proportion of dung, owing to the dung at the sides inside being almost as high as the surface of the earth: and again, the roots being mostly confined to the narrow space between the slabs, there is less encouragement given to an excess of mere luxuriance, whilst there is enough of vigour to secure well-flavoured handsome fruit. Weight for weight, Melons grown in large pots will generally be richer than those grown in a large bed of earth; and this curtailing of the feeding-ground in a pit or frame secures some of the advantages of the pit, and dispenses with much of the extra and constant attention that pits require over common beds.

ORNAMENTAL DEPARTMENT.

Besides potting, regulating, and moving, the chief work has been placing tubers of *Achimenes* in heat, bringing tubers of *Dahlias* to the floor of a vinery beneath a stage—that is, the general bulk, moving the *Verbena* cuttings referred to under calico to harden, planting out struck *Verbenas* singly in a bed to grow for six weeks, putting in more cuttings, potting-off variegated and Ivy-leaved *Geraniums*, planting lots of *Scarlets* in earth pits; and so little are we yet thinned, that more trenches must be dug for them. Watered slightly those *Calceolarias*, &c., in earth pits for the first time; most doing very well, and rooting nicely.—R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

SKIMMIA JAPONICA BLOOMING BUT NOT FRUITING (*Elba*).—We are surprised at this, as with us it seems to set and perfect its fruit in greater abundance than we wish it, as we think by so doing it retards its growth. Perhaps you keep it too warm. We treat it much the same as Cape Heaths, inured to strong currents of air every day. The thermometer is above 32°. The soil we grow it in is a mixture of peat and loam, with more than a usual proportion of sand. Too much coddling is its bane; and treated as a stove plant, we believe it may have refused to fruit.

LIQUID MANURE FOR ROSES AND TENDER SHRUBS (*Idem*).—The drainage of a farmyard is the best of all liquid manure for Roses, but it ought to be given clear and not thick and muddy. Tender shrubs will not want it, as rampant growth is not so advisable with them as a good ripening of the shoots. Ordinary soil is therefore quite good enough for them; and in some cases a very poor sandy soil is advisable for tender shrubs, manure water being only wanted for swamp plants, and, if they be tender, most likely clear water will be more beneficial.

ANNUALS AND PERENNIALS FOR A SMOKY ATMOSPHERE (*Idem*).—Most of the common annuals, as Candytuft, *Convolvulus*, French Marigold, and the like do pretty well. Asters do not do so well. Of perennials, *Chrysanthemums* are unquestionably the best—in fact, it has often been a question if they do not succeed better in a town than in the country. *Dahlias* grow not amiss; and if the ground be moist *Phloxes* succeed pretty well. If the soil be good and the atmosphere free from all other noxious impurities excepting coal smoke, most of plants will do; only it is not advisable to plant many white-flowered, as *Rockets*, *Stocks*, &c., as they so quickly become soiled.

MEYENIA ERECTA AND *VINCA ROSEA* LEAVES TURNING YELLOW (*F. J.*).—There must be something wrong, or the leaves of your plants would not turn yellow when the plants are in flower. The *Vinca* especially is an evergreen shrub in its way. If the plants have been forced hard to flower thus early, and perhaps placed in a draughty greenhouse, they would suffer at once, or even if kept in the stove. Very hard forcing, and perhaps something the matter with the drainage, will occasion the sudden falling-away of the leaves. Your plant is *Saxifraga sarmentosa*, and probably the variety *cuscutiformis*, a favourite plant with some cottagers, and called by them "Mother of Thousands," but we could not be certain without seeing the flower.

PRUNING CEDAR OF LEBANON (*M. A.*).—It is certainly wrong to cut these trees at all; but if it must be done when they encroach on a walk or other place, then August is the best month for pruning them. It would be advisable to cut-in some of the limbs to within a short distance of the bole, and leave others overhanging the cut part to conceal it. Do not shorten all to one length, as a shorn look must be avoided; and if you can manage without cutting them at all so much the better.

SOWING QUERCUS PHELLOS (*M. A.*).—Sow the seeds of this, the Willow Oak, at once in deep pans or boxes, and do not moisten the soil too hastily if the acorns have been kept dry. If you have a large quantity they might be sown out-doors. It is always best to sow acorns when gathered, few seeds suffer more from being kept dry than they do. When it is absolutely necessary to keep them some time before sowing they should be buried in sand, and that neither too dry nor too moist.

VARIOUS (*S. R. S., Taunton*).—Superphosphate of lime will be beneficial to Geraniums and the other flowers you name. Sprinkle a dessert-spoonful on the surface of the soil round each plant. Syringe your Peach trees with a weak solution of Gishurst compound or with tobacco water to kill the green fly, as soon as the fruit is set. Pigstye drainage is too strong for flowering plants unless much diluted—about one gallon to eight gallons of water, and we would not apply it at all to Strawberry plants; but it may be given to Asparagus and Onions, between the rows, diluted—about one gallon to four gallons of water.

FLOWER-GARDEN PLAN (*S. E. L.*).—We purpose having it engraved and published next week, with a brief note on the planting.

LEAVES OF CINERARIA INJURED (*Curragh Camp*).—The leaf seemed to be infested with a scale, that looked almost like young woodlice. We have sometimes seen young woodlice on the leaves when the plants were grown in old brick pits, but except making a few holes they did little harm. These, however, we should imagine stick more closely, and should be syringed off by the plants being placed on their broad sides. It is not common for Cinerarias to be thus infested, and it is more strange from being common in the neighbourhood. With freedom from frost, coolness, and moisture, Cinerarias are little troubled with insects. Heat and dryness will bring them in shoals. There are so many "Amateurs," that looking back to such a signature to find what we want, would require no end of trouble and time. We are anxious to oblige to the utmost, but when correspondents make references, they will greatly oblige by giving the page and the volume.

PIPES REQUIRED FOR HEATING (*A Subscriber*).—We think that to keep a conservatory 24 feet high, 48 feet long, and 22 feet wide, warm for plants in bloom in winter, if span-roofed, with much glass on the sides, and the pipes as you say beneath the floor, you would require at least 600 feet of three-inch pipe instead of 370; but much will depend on the above matters. It will require more heating surface if the pipes are buried.

COLEUS PLANTS DAMPING-OFF (*A Subscriber*).—We can only conclude they have not had air and heat enough. They will not do much good under 60°. If we knew the treatment we might say more. Were they chilled too much in the journey?

SYRINGING WITH CLEAR SOOT WATER (*H. M., Lyme*).—“R. E.” says syringing with clear soot water is a great preservative against all kinds of insects, but it will not kill them when there. It must not be used too strong for *Azaleas*. He often makes it pretty strong, and dilutes as he uses it. But for general purposes a peck of good fresh soot will do for a hog-head of water. The following is the process of making it:—Place it nicely sifted in the tub, mix it with enough of water to form a paste with an old birch broom which causes it to mix with the water thoroughly and intimately. Then pour in the water and stir with the broom as you proceed. This will give you soot water but not clear, and about half as much or so of fresh lime powdered, and stir all well together. In a couple of days there will be a little film of chalk and soot on the surface of the water; remove that and the liquid is fit for use, as clear and bright as the best sherry or the sparkling pale ale some people like so much. The lime so clarifies the soot water that not a particle of black will be left on the foliage, though smelling strongly of ammonia. For some things you may use it stronger than the above, but it will be strong enough for Beans, Cucumbers, &c.

MOVING A LARGE PYRUS JAPONICA (*M. S.*).—You may enclose both the *Pyrus* and *Magnolia* for your conservatory, and must not meddle with the *Pyrus* now. If the house is merely to exclude the frost, and the back wall is not to be shaded, and you can give plenty of air, it need not be removed even in the autumn. The *Magnolia* will do very well if the heat is not often at night above 40° in winter, and you can give air and light enough.

FLOWER-GARDEN PLAN (*E. S.*).—We would prefer lining your beds instead of diamonding them. Our chief objections would be, that with the exceptions of 3 and 4, all the other five beds would have white or light edgings, and in No. 6 the *Pyrethrum* would smother the *Gazania*. Suppose you let 7 stop as it is; Flower of the Day, Brilliant, Purple King, and Ivy-leaf, white or variegated *Alyssum*, or *Cineraria maritima* as a broad edging. Then we would plant all the rest in pairs—opposite and crossed. Thus, 5 and 6 centered with *Pyrethrum* and *Heliotrope*, banded by purple *Petunia* or Purple King *Verbena* and edged with *Gazania*. Then 1 and 2 we would surround with *Mangliesii*, with just a strip of *Cerastium*, and 3 and 4, make a like, Tom Thumb, Christine, Lobbianum, and that would be infused with a string of purple or blue, as *Charlwoodii Verbena*, or *Lobelia speciosa*.

FLOWER-GARDEN PLAN (*S. L.*).—We are sorry that we cannot recommend a better rather dwarf Geranium than Brilliant, but Bijou, bounded by Cloth of Gold, would make a charming bed at 9; or you might make a centre of white, and two scarlets, and two oranges, all surrounded with an edging of purple, as Purple King *Verbena*. Your second border will be nice if you keep on *Campanula carpatia* to the autumn. In the first border *Calceolarias*, after *Perilla*, will be more telling than Geranium *Mangliesii*. We have no fault to find with your balance pair of fancy figures; but the whole would look better if 1 were in the same style as 9. You will get a good hint by referring to the plan given page 224, and that from “S. E. L.” in our next Number. In these you will perceive what we consider a test of good arrangement—that it is impossible to alter any figure in the group without destroying the effect of the whole. Now, you will perceive we could change any two of your figures into ovals, circles, or squares, &c., without making much difference to the plan as a whole; but of course it will look well when planted, and you have the best right to please yourself even as to the forms of the clumps.—R. F.

GULL (*Sutton*).—See what “G. A.” says to-day. One gull would be enough in your garden, and he would not object to a daily ration of raw garbage.

CULTURE OF TRICHOMANES RADICANS (*Boughspring*).—The fronds of your plant are grown in air too dry for them, and the becoming brown and dying is the result. We extract for your guidance the following from Johnson’s “British Ferns:”—“It may be successfully grown in a pot by first filling a middling-sized pot one-third full of finely-broken potsherds or sandstone, putting upon this a layer a little finer, and filling the remaining space with a compost of fine loam, silver sand, and finely-powdered sandstone in equal parts. This is to be pressed firmly together, and then the caudex or main root very carefully arranged upon the surface, fixing it by means of a few very small hooked pegs—the smaller in size and quantity the better. Then strew a little sand and powdered stone over the surface, just enough to cover and settle the roots. This being done, the whole is to receive a liberal watering from a very fine-rosed watering-pot, and left for a short time to settle. Place the pot in a saucer, the top of which is to be below the level of the top of the first layer of stone in the pot. This saucer is to be kept full of water, with a bell-glass turned over the pot, and to rest in the saucer of water. Place the whole in a warm greenhouse or stove, and by keeping the saucer filled with water success may be relied upon. Similar directions may be followed for cultivating this Fern upon a larger scale. Be careful always to keep the atmosphere moist and warm, which moisture will be secured by keeping the pan full of water.”

ANEMONES NOT FLOWERING WELL (*W. Reed*).—We have known Anemones do very well for four years without removal, but in general they are better when removed every two years, and either planted in a fresh place, or the soil in which they are grown exchanged for other soil. Generally they do very well without any manure, but they are benefited by liquid manure being applied while they are in a growing condition, or if the ground were covered with rotten dung while they are at rest it would benefit them much.

TOM THUMB GERANIUM (*T. Bolton*).—The flowering of Geraniums out of doors depends more on the character of the season after they are planted and the position they are in than on any treatment they receive beforehand. If the plants be good and can be turned out with good balls they will flower quickly if the season is a dry hot one. If, on the other hand, it is moist, they will likely run more to leaf in the early summer and not flower until late. Soil, however, has a little to do with this, and situation also.

CAMELLIA LEAVES SPOTTING (*A. K. H.*).—We cannot perceive any trace of insect on the leaves you have sent, but as you say you keep your plant in your drawing-room, may the discolouration not arise from the plant being so far from the light? or has it at any time been watered with anything pernicious, as salt in the water, or soda or any like chemical substance that might cause the disease? So many causes might give rise to the injury, that without being more fully acquainted with the particulars we are at a loss to define the real one.

SEEDLINGS FROM NEWTOWN PIPPIN APPLE (*H. P. B.*).—It is very unlikely that any of the seedlings from the pips of this Apple will come like the parent, but you may obtain one or more good useful kinds perhaps, as new varieties are obtained this way. It is, therefore, the best way to let the seedlings be transplanted out into the open ground by the middle of May, choosing damp weather for the job, and as they advance an experienced hand will be able to tell by the foliage which are Apples and which are crabs. The former may be made to bear sooner by their tops being taken off and grafted upon fruit-bearing trees. The others being only crabs may be used as such.

CINERARIA AND PRIMULA (*Southampton*).—We cannot undertake to recommend seedsmen; but we would say, if you really want good varieties of them, send to some one who advertises in our columns, and say you want the best they have, and would rather give an extra price to insure its being good. *Lapageria rosea* does not generally prosper from cuttings. At least we have never seen it do so.

TRANSPLANTED OLD APPLE TREES (*H. B.*).—In transplanting a young tree it is better not to cut it much down, because that reduces the chances of leaves forming in sufficient abundance to perform the functions of nature. This, however, is not the case with an older tree, for in the proportion between top and root there is an undue preponderance of the former, when it is taken into consideration that the roots are invariably injured more or less in the operation of transplanting. It is, therefore, better to cut down partially; otherwise thin the branches at once before the sap advances much, taking care to retain as many branches as will maintain the shape and character of the tree.

BAY TREES INJURED BY THE WINTER OF 1860-61 (*H. B.*).—If you do not object to the appearance the dead and dying shoots present, it is often as well to leave them on as to cut them away. If, however, they are very unsightly a part may be cut off at once, and it is to be hoped the ensuing season will restore them; if not, the worst had better be destroyed at once, and young ones planted, not in the same place unless the soil be exchanged. Cutting down evergreens entirely seldom answers; it is better at all times to leave a portion of the old foliage on, even if it be diseased. It serves in some respects to perform the functions required of it. Whatever cutting you make had better be done at once.

LYCOPodium LYALLI NOT PROSPERING (*Southampton*).—It is now the season for this class of plants resting, or rather it has lately been the season for that purpose, and if you had allowed it to occupy a place in a warm greenhouse and kept it neither too wet nor too dry, it would have been ready in a week or two to start a fresh growth. All herbaceous plants die down at one period or other of the year, unless their growth be kept up by unnatural excitement, which in the end brings on disease. No doubt but your plant will start and grow again by-and-by; but until it shows signs of doing so, keep it cool, and after it begins to grow increase the heat and you will find it come all right afterwards.

HARDY LARGE-FLOWERING CHRYSANTHEMUMS (—).—Some one, whose letter is mislaid, asked for a list suitable for growing far north, so we present the following:—Alfred Salter, Aregina, Auguste Mîc, Bixio, Bossuet, Caractacus, Cassy, Diadem, Duchess of Wellington, General Harding, General Slade, Golden Hermine, Jardin des Plantes, Little Harry, Lord Ranelagh, Madame Foggi, Madame Damage, Orange Brilliant, Plutus, Progne, Queen of England, Snowball, Striped Queen of England, Tribby, Yellow King, and Yellow Perfection.

VINES NOT DOING WELL (*A Subscriber*).—We fear that something else was wanted than removing the clay that overlaid the roots of your Vines on the border and against the house. It would have certainly been better to have taken up the Vines entirely and made a new border, and replanted them, or introduced fresh ones, for as you say the fruit last year was colourless and ill-flavoured, it was a pity to lose another season in the attempt to partially restore them by enticing the roots to the surface with a horsedung covering. Late as it now is, we would prefer destroying the Vines that are almost certain to be unsatisfactory, and remake the border and plant fresh ones. By having Vines with roots spread out in soil in a flat basket, and that basket kept in a suitable place under glass, growth will be going on, and you can plant basket and all when you have finished your border by the middle of May.

SEA-KALE UNDER AN APPLE TREE (*H. P. B.*).—If the roots of the Apple tree occupy the ground and the top overhang it, the Sea-kale will not be so good as when grown in the open ground. It will, however, succeed tolerably well if manure be liberally applied. See what has been said about Sea-kale in another part of our paper.

HYACINTHS IN GLASSES FLOWERING UNEVENLY (*F. W. B.*).—Most likely those bulbs which did not throw the flower-spoke above the collar were forced hard and early, when they are likely to do so; while those which did not open their flowers, but elongated the stem, must have either been from imperfectly-ripened bulbs, or perhaps grown in transparent glasses, exposing the roots to the action of the light: either of these causes would occasion the defect complained of.

PAINT FOR GREENHOUSES IN SMOKY TOWNS (*C. F. T.*).—Have the outsides painted a dark stone colour, and with the white paint inside have some Prussian blue mixed. The latter should be used wherever a greenhouse or conservatory may be situated; it gives a very pleasing tone to the colour.

AUSTRALIAN SEEDS (*Lex*).—They are all *Acacia* seeds, and require sowing in a light soil in a greenhouse, after being soaked for two hours in water you can just bear your finger in. *Wattle* is a colonial name applied to the *Acacias*, but which is the *Cape Wattle* we do not remember.

NAME OF SEED (*W. H.*).—The seed of *Abrus precatorius*.

NAMES OF PLANTS (*W. D.*).—1, No flowers; 2, *Acacia hispida*; 3, a *Chorozema*, without leaves; 4, *Tropaeolum tricolorum*; 5, *Azalea amena*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE POULTRY CLUB.

As a member of the Poultry Club, and one of the Honorary Secretaries thereof, I cannot allow the two condemnatory articles in your Journal of the two last weeks to pass unnoticed. From their tenor, I feel assured that the writer must be smarting under the conviction that the Club is formed to correct his and his brother Judge's errors of judgment, or that their decisions may be hereafter censured by the Club. It is well known to many exhibitors, that at many of our large Shows there have been most glaring mistakes, whether willfully or from not knowing the points I am not inclined to say. The gentlemen who have formed this Club have but one object in view—that of obtaining the honest and fair exhibition of poultry, and uniform judgment. And so far the success of the Poultry Club has been proved beyond what its promoters could have expected, numbering amongst its members, residents in England, Ireland, Scotland, and even Holland, including breeders of every known variety of poultry, many of them acknowledged judges, and "men of standing and position in society," who are prepared to act under the Poultry Club's rules. Time only will show whether the Club can accomplish the object aimed at. And even should it fail in doing so, the promoters will have the satisfaction of knowing that it has had a fair trial.

At the same time I must say I think the articles in question are premature; and it seems evident in predicting failure, that "the wish has been father to the thought."

In conclusion, I can only repeat that the Club will do all in its power to secure honest and uniform judging, without which poultry shows will share the fate which has been so assuredly anticipated for the Club in *THE JOURNAL OF HORTICULTURE AND COTTAGE GARDENER*. That such prediction may be doomed to disappointment, is the hearty wish of—EDWD. TUDMAN.

[We readily give insertion to Mr. Tudman's letter, for we have no object except the promotion of the interests of poultry exhibitors, and the success of poultry exhibitions; but we must express our regret that he has ascribed unworthy motives to those who have published in these pages opinions differing from his own. This is not the best nor the pleasantest way of attaining to the truth, for in this and in all other discussions, reasons should be weighed; what the reasoner's motives are, is perfectly immaterial.]

The only question for discussion is, Will the Poultry Club effect its objects? We think that it will not, and we have stated temperately why we so think, and we have that opinion sustained by the opinions of others well acquainted with poultry exhibitions. If wrong, no one will rejoice more than we shall over the success of the Poultry Club.—EDS.]

'MALAYS AT DEVIZES.

I DID not receive your Journal till late, and fully intended to reply to Mr. Fox's query, but it escaped my memory. If "better late than never," I would add a few words to your notes on the Malay. "*Chacun à son goût*," say our neighbours, and I do not doubt there are many who admire the Malay. Of those at Devizes, I admired Mr. Fox's as much as any, but for this reason—that, in my eyes they were less ugly than their prize and highly commended neighbours. Some young birds highly commended were those which provoked my "dotting;" they had not the brighter colours of the adults, which, to a casual observer, covers over defects. I would candidly say that, in my eyes, Mr. Fox's birds are too handsome.

I agree with your definition of the Malay; and if you do not think me too bold, I would add one or two points. The hackle of the Malay is peculiar to the breed; instead of the feathers, as in other poultry, getting longer as they approach the shoulders, they are nearly of the same length throughout, so that they fail to cover over the shoulders, and make the neck appear as if stuck on the body. I give you simply my own impressions. It is here, I fancy, and I beg pardon for saying so of so good a breeder, that Mr. Fox's birds fail. You say that the comb should be flattened down on the head, and I would add that the head should be broad, as well as overhanging the eyes. I agree with all your remarks about the scantiness of feather. Have you not, however, omitted a characteristic of the breed, especially of the featherless strains—that is, a peculiarly cool and defiant air? You may rattle your hand along the front of the pen, and your true Malay takes no notice of the affront, nor is he at all put out—indeed, had he a lip, I should expect to see it curl up; but that would be the only part of the body to move.

To turn to another subject. I am very glad to see that others have noticed the faults of omission and commission in the schedules of Worcester and Bath and West of England Shows. In both the duration of the Show is preposterous, and if it is unaltered, I hope breeders will come to the same determination as I have done—to keep my best birds at home.—Y. B. A. Z.

ACCRINGTON EXHIBITION OF POULTRY.

PROBABLY were those parties intimately conversant with poultry-breeding to attempt the selection of the most inappropriate time of all others to hold a public exhibition of this kind, a period of the year could not have more aptly suggested itself to their minds than the one adopted for the Meeting at Accrington—the first week in April. To exhibit their best birds at such a critical portion of the early breeding season would, it would be imagined, have daunted the spirits of even the most resolute and persevering; for now is the time in which the fondest expectations of all breeders beat high in anticipation of those chickens that are hoped to take all before them at our earliest Summer Chicken Shows. It is, of course, quite obvious no chicks of 1863 are as yet eligible for showing; whilst the stock-birds are so busily engaged, it taxes the resolution of their proprietors to the utmost to place so serious an interference to the production of early broods as that of exhibiting them at so important and anxious a season. To this particular Meeting, however, the time of holding the show appears rather that of an unavoidable necessity than the result of willing selection.

The Spring Fair at Accrington is always held on the first Thursday in April, and as their Cattle Show invariably takes place at this time, the poultry has become an adjunct to this meeting, only since the time that the universal desire to improve our breeds of domestic fowls has become so popular. Notwithstanding these serious drawbacks, as goodly a muster throughout the varied classes was got together as we have witnessed at any local meeting for years past. It is quite evident to all observers, that the Accrington Committee are as desirous as it is possible for men to be to insure permanent success to their undertaking, and both their collective and individual exertions are strained to the utmost to promote this desirable end; but they have not yet attained the experience of those who superintend our long-established societies. We will, therefore, just courteously suggest two points on which an altered arrangement would, without doubt, be most advisable. The one is, that the printed catalogues are openly sold about the streets for many hours previously to even the commencement of the arbitrations. This gives a great opening to the disaffected

(because disappointed) competitors, and throws open a good and sufficient cause of complaint as to the possibility of unfairness in the adjudications, should such be attempted. It has long been an established rule with all our principal committees, that no catalogue should be issued under any circumstances whatever until the arbitrations are finally settled. The other arrangement at Accrington, equally open to improvement is, that every person willing to pay the admission fee at the doors can be present even at a much earlier hour than that on which the Judges are themselves permitted to begin their duties, and afterwards narrowly follow such arbitrators step by step all through their adjudications, and that, too, within a distance of a few feet only. It is advanced in support of this last-named arrangement, that as the Show holds open only a single day no other plan can be adopted; but surely we contend that exhibitors who complain of the retention of their specimens for a few additional hours to meet this objection, by allowing the arbitrators to fulfil their duties calmly and with quiet unbroken deliberation, are not those on whom alone the success of poultry exhibitions depends. Having pointed out these essential points to improved management, we shall proceed to make a few remarks on the birds exhibited.

On entering, the eye of the visitor first rested on as excellent a *Game* class as need be wished for, every colour being equally eligible. A grand pen of Black Reds belonging to Mr. Fletcher, of Manchester, stood at the head of the prize list. They were not only perfect specimens, but were also shown in the condition for which this well-known exhibitor's birds are always proverbial. Mr. Grimshaw's Brown Reds were but little inferior, and obtained the second prize. We confess disappointment in the Single Game cock class, as the greater proportion were not shown in high condition. Brown Reds had here the advantage. In *Hamburgs* we never saw more reputable classes than both varieties of Spangled birds—they were a show in themselves; but in the Pencilled ones, whether Golden or Silver, we could only look back with regret when mentally comparing them with those exhibited in bygone years by Messrs. Archer, Chune, Tyler, and Worrall. We trust some enthusiastic breeder will strive to restore again to our meetings one of the most winning characteristics. The *Dorkings* were many of them good, but we especially noticed some three or four pens so grossly overfed as to have become alike quite useless, whether for exhibition or as stock-fowls. This lavish management invariably tends to the most annoying disappointment, for to any successful breeder it is well known poultry suffer less from paucity of food than over-petting. Captain Heaton's Grouse *Cochins* were very good, and the whole of the class of Black *Spanish* were a triumph of attentive management. *Game Bantams* were numerous and very good, a pen of capital Brown Reds here shown have seldom been surpassed. Some perfect *Polands* were also competitors in the extra class.

The *Turkeys* and *Ducks* were exceedingly good, and one solitary pen of *Geese* was well shown.

The last coop contained a singular addendum to a poultry show—viz., a Scotch Terrier bitch and puppies. The inquiry of visitors "what next?" was a natural one.

The day was beautifully fine: consequently the ground was constantly well filled, though, as the two hundred pens of poultry were arranged in one unbroken single line, no thronging took place. To excite the merriment of the company, the day's entertainment concluded with a spirited donkey race, with all its concomitant "ups and downs." The Committee were evidently trying all means to please every one, and were, beyond doubt, successful. With improved trade in this district, shows will most probably insure even greater popularity.

GAME (any colour).—First, J. Fletcher, Stoneclough, near Manchester. Second, N. Grimshaw, Pendle Forest, near Burnley. Highly Commended, C. W. Brierley, Oakenrod Terrace, Rochdale; N. Grimshaw; A. Hodgson, Church Row, Illingworth. Commended, J. Firth, Ellen's Grove, Halifax; E. Beldon, Park Cottage, Bradford. *Cock*.—First, J. Sunderland, jun., Colky Hall, Halifax. Second, A. Hampson, Bolton-le-Moors (Black Red). Highly Commended, R. Whittam, Mount Pleasant, near Burnley; N. Grimshaw; J. Firth. Commended, J. Sunderland, jun.; J. Fletcher; W. Ayrton.

HAMBURG (Golden-pencilled).—First, Miss E. Beldon, Park Cottage Bradford. Second, A. Nuttall, Newchurch, Rossendale. Highly Commended, J. Munn, Shawclough, near Manchester.

HAMBURG (Silver-pencilled).—First, E. Hindle, Woodnook, Accrington. Second, J. Dixon, North Park, Bradford. Highly Commended, C. Moore, Poulton-le-Fylde. Commended, E. Hindle.

HAMBURG (Golden-spangled).—First, Miss E. Beldon, Bradford. Second, J. Dixon, North Park, Bradford. Highly Commended, E. Whittaker, Edge-worth, Turton; N. Marlor, Denton, near Manchester.

HAMBURG (Silver-spangled).—First, J. Dixon, Bradford. Second, Miss

E. Beldon, Bradford. Highly Commended, J. Fielding, Newchurch, near Manchester; J. Patterson, Church, near Accrington. Commended, A. Bell, Burnley.

DORKING.—Prize, J. F. Newton, Kirby-in-Cleveland, Yorkshire (Coloured). Highly Commended, T. W. Hill, Woodlands, Heywood (Grey). Commended, T. W. Hill (Grey); J. Dixon, Bradford; E. Smith, Middleton, near Manchester (Grey).

COCHIN-CHINA.—Prize, Captain Heaton, Lower Broughton, Manchester. Highly Commended, F. M. Hindle, Bury New Road, Haslingden (Buff); Captain Heaton. Commended, F. M. Hindle (Buff); H. & J. Newton, Garforth, near Leeds; R. H. Nicholas, Malpas, Newport, Monmouth (Buff); C. W. Brierley, Oakenrod Terrace, Rochdale.

SPANISH (Black).—Prize, Miss E. Beldon, Bradford. Highly Commended, S. Robson, Brotherton, Yorkshire; J. Dixon, North Park, Bradford; E. Brown, Sheffield; E. Smith, Middleton, near Manchester.

BANTAM COCK (Game).—First, W. Lawrenson, Poulton-le-Fylde (Duck-wing). Second, T. Barnes, Accrington. Highly Commended, J. W. Morris, Rochdale (Black-breasted Red); J. Munn, Shawclough, Newchurch; W. O. Kenyon, Mossfield, Wavertree (Duckwing). Commended, C. W. Brierley; J. Munn; J. Crossland, jun., Wakefield.

BANTAMS (Game).—First, T. Barnes, Accrington. Second, J. Munn, Shawclough, Newchurch. Highly Commended, C. W. Brierley, Rochdale; J. Munn; J. Crossland, jun., Wakefield. Commended, E. Brown, Sheffield; R. H. Nicholas, Newport, Monmouth (Pile Game).

BANTAMS (Any other variety).—First, Miss E. Beldon, Bradford (Black). Second, J. Crossland, jun., Wakefield. Highly Commended, G. Ormerod, Accrington (White); J. Dixon, North Park, Bradford. Commended, C. W. Brierley, Rochdale; R. H. Nicholas, Monmouth (Chinese Silk).

ANY OTHER VARIETY.—First, E. Beldon, Bradford (Polands). Second, J. Dixon, Bradford (Polands). Highly Commended, T. W. Hill, Woodlands, Heywood (Crève Cœur); Mrs. M. Seamons, Hartwell, Aylesbury (Brahma Pootra); H. & G. Newton, Garforth (Black Hamburgs); H. Lacy, Underbank, Eastwood (Dark-pencilled Brahmas); R. H. Nicholas, Newport, Monmouth (Black Hamburgs). Commended, J. Hargreaves, Broad Oak (Brahma Pootra); A. Lord, Blackburn (Cuckoo Creels).

TURKEYS.—Prize, J. Dixon, Bradford. Highly Commended, J. Cunningham, Snigbrook, Blackburn. Commended, T. Bury, Church Kirk.

DUCKS (Aylesbury).—First, H. Kenyon, Fern Grove, near Accrington. Second, Mrs. M. Seamons, Hartwell, Aylesbury.

DUCKS (Rouen).—First, Miss E. Beldon, Bradford. Second, J. Houliker, Richmond Terrace, Blackburn. Highly Commended, E. Leach, Rochdale. Commended, J. Dixon, Bradford.

GEESSE.—Prize, J. Houliker, jun., Blackburn.

Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, officiated as the Judge.

"B. & W.'s" APIARY.

(Continued from page 666.)

I HAVE unfortunately to record the total failure of my last autumn's operations in my apiary. I refer to my second attempt to Italianise it, by destroying the queens of five stocks, and compelling the bees to rear queens artificially in their place out of pure Italian brood. The young queens, indeed, were duly hatched, all five of them, several of them beautifully marked; but one of them died of starvation (I am ashamed to tell it), a second died of dysentery in January last in spite of all attempts to save the stock, and the three survivors of this terrible bee-winter have done nothing hitherto but breed drones. This I feared would be the case, owing to the great scarcity of drones in my apiary last August. The fact is—none of them, of course, were impregnated. It was only last week, on the 21st, that I was able to assure myself of the truth by actual inspection of two of these hives, although I had suspected it by seeing several small drones alive and dead about the garden.

It may interest your readers to know what I have done, and what I purpose doing with these hives, with a view to saving them if I can; but let me first give the arrangement of my surviving stock at the time I recommenced operations last week.

BEE-HOUSE.

A.	B.	C.
Pure Italian queen (weakish but active).	Italian drone-breeding queen (weak).	Italian drone-breeding queen (weak).
D.	E.	F.
Hybrid Italian queen (strong).	Hybrid stock died in January. Strong stock from garden now in its place.—("J." at p. 666.)	Italian drone-breeding queen (weakish).

GARDEN.

G.	H.	I.	K.
Dead.	Strong.	Weak.	Given away.

I began then by hunting for and destroying the drone-breeding queen of B. I then took a comb with brood of all ages out of A (pure Italian), and inserted it in B in place of an empty comb, taking care not to disturb the combs containing the few drone-grubs in B, which I now look upon as the *spes gregis*. The queen of C was then caught and killed, and all the bees turned adrift to find a home where they could. My hope was that

finding their own home shut against them they would have fraternised with their next neighbours of B, and so strengthened that hive. Not so, however; most of them entered E, already strong, on the shelf below them, and some were admitted into F. A few were rejected and killed, but not many. What drone-brood was formed in C was also inserted into B, and I am rejoiced to see that it has been tended with care.

Now as to future plans. In Easter week, by which time I expect the young queen of B to be hatched, and the other hives to have gained strength, I intend to proceed as follows:—1st, make a swarm of D by driving it into a box well stored with comb and food; 2nd, place D, when cleared of its adult population, in the room of A, after driving or shifting into D the Italian queen and population of A; 3rd, put A with its Italian brood alone in place of E, setting F over it after first catching and destroying its drone-breeding queen; 4th, make a swarm of E by driving into a box well stored with comb, as in the case of D above; 5th, place E with its brood-comb under B. Here are five distinct operations tending to equalise my stocks in point of population, and to preserve two out of three of the drone-breeding stocks which otherwise would have perished, by supplying them first with the means of rearing fertile queens, and then with an increased population to work with. In this way, too, I shall turn the misfortune of drone-breeding to some profit. I may mention that several of the drones which I examined were well-marked Italians. I also had a good view of the queen of A, which is a most beautiful specimen of her race, and large and vigorous also. This plan of mine, as detailed above, courts the criticism of the "DEVONSHIRE BEE-KEEPER." He will at least allow it to be an ingenious one. Can he suggest an improvement upon it? if so, I shall be glad to hear from him.

I cannot conclude without remarking upon the extraordinary condition of the bees in this country. Deserted apiaries are to be seen everywhere. I believe that nine-tenths or more of our English bees have perished this winter or the previous autumn. I venture to predict (and I was a true prophet last May), a fine summer for honey, if only we have a dry and rather cold six weeks before us.—B. & W.

[Whilst disclaiming all pretensions to criticise the programme of so accomplished an apiarian as "B. & W.," I can fully corroborate what he has stated with regard to the difficulty—in fact, I may say the impossibility, of getting late-bred queens impregnated last year. Nearly all of mine were slaughtered by their own bees, whilst the only two that survived turned out drone-breeders in the spring. This phenomenon must probably be attributed to continued low temperature rather than the paucity of the male sex. Dzierzon places the temperature required for a successful wedding flight at above 75°, and I am disposed to think that not less than 70° to 75° will suffice. How few days were there last year during which the thermometer stood so high as this in the open air! In one of my own hives a great number of drones were in existence until quite late in the autumn, when they were expelled by the workers in the ordinary way; and yet the young queen of this colony is at the present moment incapable of breeding aught else than drones. I purpose keeping her alive, if possible, for the sake of her male offspring, recruiting the worker population by the insertion from time to time of a sealed brood-comb: this course is, in fact, substantially the same as is proposed by "B. & W.," with respect to the drone-breeder in hive B.

In conclusion I may add, that most heartily do I wish my esteemed apiarian friend a happy issue out of all his difficulties; and if I can in any way aid in the solution of the "Italian question," the doing so will afford much pleasure to—A DEVONSHIRE BEE-KEEPER.]

SPRING PASTURAGE FOR BEES.

ON a visit we recently paid to the Sawbridgeworth Nurseries, we saw a large quarter of *Salix caprea* (as we thought) in full bloom, forming a complete sheet of golden catkins, and peopled with myriads of bees. The day was bright—one of those lovely summery spring days we have had so many of all this season, and the lively hum of the busy throng made music in the air. This was early in March, and there were the bees evidently revelling in what appeared to be an unusually rich store at that season of the year. What struck us particularly was the great profusion of bloom on trees so small. Some of them were not more than

bushes 2 to 3 feet high, and every young shoot was a dense spike of catkins. We had always regarded the *Salix caprea* as a large tree when it bloomed; and our curiosity being excited by seeing so much on trees so small, we appealed to Mr. Rivers, who informed us that this was a variety of *Salix caprea*, which possessed that peculiar property of flowering when very small and young. He procured it some years ago from the north of England, and has hitherto used it as a stock for grafting the American Weeping Willow upon. What a treasure this would be to bee-keepers, who might plant a few in proximity to their apiaries, or in shrubberies where it would furnish abundant pasture to bees at a season when they are frequently enticed out by bright weather when there is really very little or nothing for them to pasture upon.

BEES IN THE NEW FOREST.—A great quantity of Mead—*medu*—is still made here, and it is sold at much the same value as with the Old-English, being three or four times the price of common beer, with which it is often drunk. The drones are here named "the big bees." Bees are never said to swarm, but "to play." The caps of straw put over the "bee-pots" to keep them from wet, are called "bee-hackles," and "bee-hakes." About the honeycombs or "workings," as they are commonly called, there is this rhyme:—

"Sieve upon herder,
One upon the other;
Holes upon both sides,
Not all the way, though;
What may it be? See if you know."

The entrance to the hive is called the "tee-hole." An eke for raising the hive and giving more room is called "the rear."—(*Wise's New Forest.*)

OUR LETTER BOX.

POULTRY DYING SUDDENLY (*J. Price*).—You should have told us the symptoms. The appearance indicates long-continued constipation and consequent inflammation of the bowels; but the same appearance may have arisen from the birds eating something poisonous. If the birds are constipated give each a dessert-spoonful of castor oil, and do not feed exclusively on barley. Soft food, such as barleymeal mixed with mashed boiled potatoes, should be given once a-day.

BANTAMS (*Novice*).—We believe you have some Bantams bred between Game and common ones. You will probably find them very good sitters, and useful fowls for all purposes.

DIARRHŒA IN BANTAMS (*O. D.*).—We do not believe the lump you speak of in the Bantam's abdomen is painful. Fomentation with hot water is beneficial, but if it does not increase we advise you to let it alone. The lump is sometimes a cheesy deposit under the skin, and in that case it is only necessary to make a slight incision, and to squeeze the back of it, when it will slip out. This must be ascertained; because if it be, as they are sometimes, a blood-tumour, cutting is worse than useless.

POINTS IN TURBITS (*Inquirer*).—The most important points in Turbits are the following:—They should be small and neat, large coarse birds being particularly objectionable. The head in a good Turbit is peculiar, being flat and somewhat frog-like; the beak should be short, but not turned down like the beak of an Owl or Barb. The shoulders should be without white splashes, and of a sound uniform colour, whether red, black, or yellow; if silver or blue, with the black bars well and distinctly marked; the less colour on the thighs the better, though it is very difficult to breed them without any; the entire plumage of the body, flight, and tail feathers pure white. With regard to the turn-crown, some prefer a mere point of recurved feathers, others a broad shell; and prizes have been awarded by good judges to plain-headed birds. It is indispensable, however, that the pair must match accurately. As a rule we should think that the turn-crowns would beat the plain-headed under all judges, other things being equal. It is an additional property, and one of some importance.

WINDOW AVIARY (*H. B.*).—The window is in a very good aspect for an aviary, and the size you mention would hold from fifteen to twenty small birds. The following would stand the cold and agree very sociably together—viz., the Goldfinch, Chaffinch, Bramble Finch, Bullfinch, Grey Linnet, and Redpoll, and as the season advances the Canary, Java Sparrow, and Averdine might be added. A small fir tree in the centre would add to the appearance, and the birds would enjoy it.

DRIVING BEES (*Sutton*).—If you place a strong stock upon an empty box, and compel the bees to work through the latter, they will ultimately take possession of it, and when they have adopted it as their breeding-place, the original hive may be removed. No precise period of time can be named for the completion of the transfer, which is open to the double objection—that if successful, no swarm can be expected this summer, and so great a proportion of drone-comb is apt to be built under these circumstances as injuriously to affect the future prosperity of the colony. After driving bees into a straw hive, you may readily transfer them into a box, by knocking the cluster out on a cloth, and standing the box over them, supported on wedges or a couple of sticks an inch thick. As soon as all the bees have ascended they should be put in the place they are intended permanently to occupy. Whilst replying to your inquiries, we should strongly advise you to eschew either of these operations and trust to natural swarming.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 14—20, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				degrees.			m. h.	m. h.	m. h.		m. s.	
14	Tu	PRINCESS BEATRICE born, 1857.	30.177—29.872	48—25	N.W.	—	9 af 5	52 af 6	18 3	26	0 21	104
15	W	Least Stitchwort flowers.	30.089—29.900	60—20	N.E.	—	7 5	53 6	40 3	27	0 5	105
16	Th	Gromwell flowers.	30.141—29.820	52—42	S.W.	.02	5 5	55 6	1 4	28	0 af 9	106
17	F	Royal Hort. Soc. incor. 1859.	29.824—29.795	59—35	W.	—	3 5	57 6	24 4	29	0 24	107
18	S	Dr. Darwin died, 1802. B.	29.869—29.785	57—45	S.W.	.01	1 5	58 6	sets	●	0 38	108
19	Sun	2 SUNDAY AFTER EASTER.	29.810—29.793	59—48	S.W.	—	iv.	vii.	58 8	1	0 51	109
20	M	Oxlip flowers.	29.953—29.917	61—38	S.W.	—	57 4	2 7	2 10	2	1 4	110

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 57.7° and 36.1° respectively. The greatest heat, 77°, occurred on the 19th, in 1854; and the lowest cold, 20°, on the 16th, in 1847, and 19th in 1852. During the period 154 days were fine, and on 98 rain fell.

WINTER-FLOWERING ORCHIDS.



WITHIN the last two or three years I have been repeatedly told that there was a fine well-grown collection of my favourite tribe of plants cultivated at Pendlebury House, near Manchester, the residence of J. A. Turner, Esq., M.P.; and as I was desirous to inform new beginners what species bloom at a season of the year when Flora's gifts are few and far between, I made up my mind to see the collection referred to above, surmising that I should find some still in flower. Accordingly on the 27th of last month I took advantage of an omnibus to Pendleton, which is two miles from the centre of Manchester, and Pendlebury is nearly two miles further on the road to Bolton.

The country thereabouts is undulating but gradually rising. I found the house pleasantly situated on an eminence, embosomed amongst fine trees, chiefly Beech, showing that the smoke of Manchester, and the tall chimneys of its factories, had not destroyed all the trees in that district. In fact, many gentlemen's seats I observed were surrounded by apparently healthy, large forest trees; whilst on the side (south-east) where I live, the trees are mostly scraggy starved specimens, owing to the subsoil being a strong, wet clay, and the top soil thin and poor. Indeed, any observing person may judge of the soil and subsoil of any district of country he passes through, by noting the state of the hedges and trees there growing.

A mere list of the Orchids at Pendlebury House would not occupy much space, and would not convey much information; so I will add a brief description of each, especially such as are not common, and consequently are not generally known.

Ansellia africana is not rare, but here is a truly noble specimen with strong pseudo-bulbs 5 feet high, and so many that the plant measured as much through.

Brassavola glauca.—This was growing on a large round block. There were two varieties, one much larger and handsomer than the old variety. The flowers of both are large and striking.

Cattleya Warczewiczii.—Rare. A delicate flower; large and beautiful rosy purple sepals; lip a deep yellow, large spot in the centre margined with bluish.

Ceologyne ocellata.—Medium size; inside distinctly edged dark, spotted with light colour.

Cypripedium Fairrianum.—A beautiful dwarf species, with pure white sepals, and petals richly striped with dark maroon; lip or slipper greenish-yellow, veined with dark coloured lines. This a real gem among Lady's Slippers.

Cyrtorchilum maculatum.—A good old species, free-flowering and very handsome.

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Dendrobium nobile.—Too well known to need describing. A splendid specimen 4 feet by 4. Very densely flowered.

Calanthe vestita tardiflora.—Pure white sepals and lip, the centre of the latter has a spot of dark maroon. The flowers are more densely placed on the flower-stem, and are of a more compact form. It flowers at least two months later than the species, and so far is a desirable variety.

Dendrochilum glumaceum.—Small flowers, of a straw colour. They are numerous and densely set on a drooping panicle. There were twelve spikes on the plant. Though not a showy species, it is very desirable on account of its elegant habit.

Epidendrum aurantiacum.—A species with golden flowers. Not rare.

Epidendrum verrucosum major.—A fine variety, with dark flowers spotted with white.

Ionopsis paniculata.—A pretty little white-flowered species. Well worth growing.

Oncidium Cavendishianum.—One of the large-leaved section of Oncids, with large bright orange flowers on a lofty branching flower-stem. Handsome and showy, and easily cultivated.

Oncidium leucocochilum.—A handsome well-known species, flowering almost all the year round.

Odontoglossum bicktoniense.—A handsome species. Useful as a winter-flowerer.

Phalenopsis grandiflora.—This is a beautiful well-known species, with large moth-shaped flowers, blooming when strong nine months out of the twelve.

Phalenopsis Schilleriana.—A new and rare species, with medium-sized flowers of a delicate rose colour. The flowers are handsome, and, in addition, the leaves are beautifully variegated. There were two plants here: one had made a new leaf nearly 9 inches long. I valued the two plants at fifty guineas, but was informed that a nurseryman had thirty-five guineas for the larger plant.

Vanda cristata.—A noble plant, with large, rich, crested flowers.

Zygopetalum hirsutum.—This is a pretty dwarf species, with a large hairy lip of a purplish colour.

The above list proves that an Orchid-house may be gay with flowers even in the dead of winter, though in this district very little of what we understand by winter weather has been experienced; as a proof of which, I saw the other day a Pear tree and also a Plum and an Apricot tree with fully expanded blossoms.

This collection of Orchids is extremely well grown. The gardener, Mr. Tate, is an Exeter man, and fully understands his business. He has adopted cocoa-nut fibre dust as one material to mix among the usual compost. He pointed out to me how the *Cattleyas* were rooting amongst it. In all my experience I never saw such a quantity of young, healthy, strong roots pushing freely out and around every pseudo-bulb. I said if my friend Beaton saw them he would be in ecstasies. No man has done nearly so much as he has to bring this

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valuable substance into repute as an addition to our composts.

Let all Orchid-growers throughout this empire procure it as soon as possible, and mix it among sphagnum moss in the proportion of two parts moss and one part fibre. I feel so confident of its usefulness, that if I had a large or a small collection of Orchids under my care I would immediately use the fibre in preference to any other substance. I think the fibre would not do by itself. It would be too open and dry too quickly, especially during the warmer months of the year. I conclude the paper by mentioning some of the rarer plants in Mr. Turner's collection.

Cattleya Leopoldi.—Several plants large and healthy. Mr. Tate told me almost every plant was a different variety.

Cattleya citrina.—This species, which is somewhat difficult to grow, is well done here. Each plant is fixed to the under side of the block.

Dendrobium formosum giganteum.—The flowers of this rare variety are double the size of the original species.

Dendrobium aggregatum major.—This variety has flowers of much larger size than the species. It is showing eighteen spikes of flowers, and is grown in a pot.

Lælia Turneri.—A remarkable species, with stems 2 feet high. It belongs to the two-leaved section. Each leaf is a foot long, and 3 inches wide.

Cattleya lobata.—This is said to be a shy flowerer, but here it flowers freely every year.

Lælia wanhina.—An orange-coloured *Lælia*, much superior to *L. cinnabarina*.

Cypripedium hirsutissimum.—A fine specimen of this rare and beautiful species.

Cypripedium Hookeri.—A plant that ranks under the class of Beautiful-foliaged plants; the leaves are dark green, spotted and barred with pure white.

Angracum superbum.—A plant 5 feet high, with leaves 2 feet long, set on each side of the stem as regularly as the bones from the spine of a herring.

Ardis cænobita.—A fine specimen of this rare species.

Erides odoratum purpurascens.—A distinct variety with more and larger purple spots on each sepal, petal, and lip. A good plant.

Vanda teres.—A large bushy plant 6 feet high, and 5 feet through. Mr. Tate says it is a distinct sort known as East's variety. Flowers freely annually.

Epidendrum bicornutum.—There I noted a large healthy plant of this, which is one difficult to grow. It is cultivated in a pot in the usual compost, only it is raised high in the centre.

I might have extended this list considerably, but I fear I have trespassed already too much on your valuable space. I must close by saying that this is the best-grown collection of Orchids I have seen for many years. They are in houses of the usual form—that is, span-roofed, and they are so arranged that you can step out of India into America merely by passing through a glass door. Even the potting-place is glazed and connected with the houses, so that in manipulating the plants they are never exposed to ungenial weather at any season of the year.

T. APPLEY.

IN MEMORIAM.

THE REV. GEORGE JEANS, VICAR OF ALFORD.

RARELY has my humble pen undertaken a more melancholy task (so selfishly, alas! do we regard the ways of our Heavenly Father), than in conveying to many who have benefited by his remarks, or who have known his name as intimately connected with gardening pursuits, the news that my valued friend whose name heads this notice has gone from amongst us. How little did I think, when alluding to him in the notice of the Warden of Winchester's garden as the friend who had told me to visit Mr. Weaver, that I should so soon have to number him amongst those whom one had known rather than as one still present with us.

It is now some years since that the cause of one of our great religious societies in which I was interested led me to visit Alford as its advocate. I was then a stranger to the Vicar, but had been assured that I should meet with a hearty welcome. In this I found that my information had been correct; my work's sake was sufficient to insure me that.

On the following morning, taking, as is my wont, an early stroll, I espied in the garden a frame of Auriculas then coming

into bloom. This soon led us to touch upon another subject on which we had common sympathies. And as each recurring year led me to Alford, and other opportunities of meeting one another were afforded us, our acquaintance ripened into friendship; and I have for many years esteemed it a great privilege to number amongst my friends one who was so fine a type of an English gentleman, a ripe scholar, and a Christian pastor, as my late revered friend.

Distinguished in early life, when scientific pursuits were not so much in vogue as they are now, for his attention to philosophical inquiries, astronomy (on which he published an excellent and most readable treatise), geology, chemistry, &c., found in him one who appreciated their value and could bring them practically to bear. These studies he never allowed to pass out of sight. He eagerly read all that was really valuable in connection with them; and no way led astray by injurious theories which had no foundation better than a "hypothesis," he was yet by no means opposed to whatever new light advanced knowledge on these subjects from time to time produced. He was not one of those who believed that God's words and God's works are contradictory. He did not consider it derogatory to Science to regard her as the handmaid and not the mistress of Revelation; and works of a contrary tendency were regarded by him as hurtful to the cause of truth as well as of science.

His transit instrument on the lawn, his geological specimens, and lectures delivered only last year, clearly showed that these earlier pursuits had still their charm for him; while his conversation on these and kindred subjects showed how fresh were still his thoughts and feelings. But it is as connected with floriculture that his name will be especially regarded by the readers of THE JOURNAL OF HORTICULTURE. For many years under his *nom de plume* of "Iota," latterly, since his friend Mr. Edward Beck's death, exchanged for his real signature, he contributed largely to various gardening publications. His philosophical mind could only view even floriculture in this aspect; and I have always felt that it was something for florists to be able to number amongst them one who did not think flowers, despised by many scientific persons, as unworthy of his notice. When Mr. Beck in 1848, disliking the tone that then pervaded gardening literature, determined on starting a periodical in which a better spirit should prevail, he summoned to his aid, for the columns of *The Florist*, the Vicar of Alford; and I may be excused for referring to a notice in the volume of that work for 1861, prefixed to a touching notice, written at my request, of his friend's death—all the more so as he has so soon followed him:—"It would ill become us to add anything to the very interesting account that he has given of the life and character of his deceased friend; but we may say that which his modesty forbids him saying himself—that the pages of the 'Florist' in those days to which he refers owed a great portion of their attractiveness to his own writing. Page after page bears the evidence of his clear and graphic pen, even where his signature appears not."

While the wide field of information over which my friend's discursive fancy could roam, enabled him to grapple with many subjects connected with gardening, it was of the Auricula he chiefly delighted to write. It was his pet, *par excellence*, and a collection unsurpassed for variety testified to the energy with which its cultivation was carried on. His judgment was sound; for as a thorough florist he admitted no restriction of rules, ruthlessly consigning to the border flowers unworthy of the stage; and when admitting varieties that were not excellent in their character to a place in his frames, assigning as his reason the real cause of his doing so. In the proposition of a National Auricula Society he was deeply interested, and, when I first proposed it, was one of the first to welcome it by his promised aid; and when the project was taken up by Mr. Douglas and carried out, he gave his earnest support. The last paper I think that he wrote was a short one for the *Floral Magazine*, in which he alluded to the forthcoming Exhibition at York, and expressed his wishes for its success. Of late years he had more frequently contributed to other periodicals; and some most reliable notes on his favourite flower will be considered by connoisseurs as a favourite authority.

He will be, indeed, a great loss to the gardening community, and will be long remembered as one of those who have given a healthy stimulus to floriculture. And I cannot forbear saying, that when, some years ago, through the carelessness of an old man whom I employed, my embryo collection was lost, and I had determined to abandon their growth, it was he who urged me

not to do so; and by his own liberality and that of others whom he interested I was enabled to begin again; and whenever he could do so he always was ready to add to it some choice sort of which he had a small piece to spare, for a more liberal florist I never knew.

I am sure that I shall be excused if I add a few words of what I knew of him as a Christian and a pastor. Endued with powers of mind of no common order, it was his delight ever to preach the simple Gospel of the Lord Jesus. His heart was large; and whenever he recognised a love to the Saviour, there he was ready to acknowledge a brother. Placed in a parish of which the emoluments were a mere nothing, and where neglect had long prevailed, he endeavoured to raise the standard of religion and morals; and having built a parsonage, was engaged in plans for the restoration of his church when death put an end to them all. His life was all in accord with his teaching; and that best of all teaching—example—in him was thoroughly carried out. Over all that concerned his domestic life I must draw a veil. It will readily be believed that one who so thoroughly lived the life of a true Christian would shine in the home circle; and as a husband, father, or brother, there are those left behind who with tears can bear witness to him in all these; while as a friend, there are many who will be ready to feel that his loss cannot well be replaced.

I little thought, when writing to me a few weeks ago, this passage occurred—"I never worked harder in my life, but it will not be so for long," how it was to come true in another way than he himself anticipated. But "marvellous are Thy ways, O King of Saints!" I may use his own words in allusion to Mr. Beck:—"It was floriculture that brought us together, but the Gospel of Christ cemented that friendship." As he was a man of prayer, we may well believe that He who answers prayer will watch over his dear ones left behind, and that the remembrance of his loving Christian life will cheer them on in their future journey.—D., *Deal*.

TREE MIGNONETTE.

THE following minutiae, it is hoped, will meet the case of others as well as that of "A SUBSCRIBER," who has been "trying in vain to raise such trees."

In March or April, better the middle of the former, select rather more of nice clean 60-sized pots than you wish for specimens of Mignonette trees, to make allowance for a few not turning out so well as the rest. Drain these pots, and fill them to within a quarter of an inch of the rims with rich light loam, such as might be made with two parts of brown hazelly loam, one part of very decomposed sweet leaf mould, half a part of heath soil, and less than half a part of silver sand; then drop a few seeds—say four—in the centre of each pot, covering them up nicely. The common Mignonette answers very well. The large-flowering Mignonette will produce stronger stems and larger trusses; but we think the old common sort blooms in general more profusely—but either kind will bloom abundantly if well treated. When sown the best place for the pots is the back of a Cucumber or Melon bed, where the pots can be plunged, and air given to the young plants as soon as they appear. In such circumstances they will not be long before they make their appearance.

As soon as the plants are half an inch in height examine those in each pot narrowly, and select the one that seems the most bold and luxuriant, either pulling the others out, or, what is better, cutting their stems below the surface with the point of a penknife, so as not to injure the roots of the one plant left in each pot. Were it not for this power of selection, and the certainty of getting a good plant, it would be as well to sow only one good seed in a pot at once. By the time the plant is an inch in height, any side shoot that offers to come should be disbudded, picking it out, but allowing the leaf next the stem to remain. When the centre shoot is from 2 to 3 inches in length, a little twig should be set against it, and the little stem tied to it to encourage it to mount, nipping out every side shoot that shows, but allowing the leaf to remain, as that adds strength to the stem, and, besides, gives it a more furnished appearance. The little twig stake should be 1 or 1½ inch from the stem; and in the process of growth, as a larger and stouter stake becomes necessary, the lesser stake should be carefully taken out and the larger one inserted in the same hole, so as to run as little risk as possible of injuring the roots.

As soon as these little pots are getting full of roots, and before the roots meet the sides of the pot, shift each plant into a large 48-sized, and plunge the pot, and keep training the main stem and disbudding all side shoots as before. As soon as that pot is filled, shift into a 32-sized pot, and let the soil be a little rougher, and give a little bottom heat as before. If the main shoot go on without showing flower it will be all smooth sailing, the disbudding of all side shoots being the principal thing; but if the leading shoot show bloom it must be nipped off, and then the best-placed shoot that comes you must train on as a continuation of the first stem; and sometimes if you want a tall stem, you may have to do this several times before you obtain the desired height. Whatever the height of the stem before the head forms, be it 1 foot, or a couple of feet or more, no flowers should be allowed to remain until the stem is as high as desirable; nor even then until the head of the tree is pretty well formed.

When the 32-sized pot is about full of roots, I prefer placing the plants in their flowering-pots, and a pot of 12 inches in diameter and depth will support a very nice specimen. In this last potting—and the pot may be larger if an extra-sized specimen is desirable—the drainage must be well attended to, and the soil chosen of a more lumpy character, so as to avoid anything like stagnant water; and to help this still more, a few additional pieces of fibry heath soil, and some bits of charcoal the size of beans, may with advantage be added to the compost. This rough material should be squeezed together pretty tight, and the surface covered all over with fine material to the depth at the sides of at least half an inch, which will prevent the air entering the soil too freely. In all such shiftings, care must be taken that the soil in the pot is moist, but not deluged, before shifting; and this will be best secured by watering thoroughly four hours or so before repotting. After this final repotting, if the pots can be partly plunged in a mild heat for a fortnight or so, it will be all in their favour; but by July they will stand well in any pit or house where they can receive moderate attention. In such places the plants will do better when the pots stand on a shelf, or on the bottom of another pot reversed; as when the pots stand on the ground the drainage is apt to be injured, and the exhalations that rise from such wet ground are not at all in their favour.

Until the head is formed it is advisable to have a frill of leaves all along the stem, but no side shoots; that, as above stated, not only furnishes clothing, but gives strength to the stem. As the head swells in diameter, the leaves on the stem will most likely be robbed, and will then fall off. In general it would be best to have the shortest-stemmed plants for winter-blooming, and the tallest for spring-blooming, as the former may be supposed to perfect their heads sooner. In both cases the treatment is much the same, as the plants should not only be kept airy, but in a temperature of from 45° to 48° or 50° in winter, with a rise from sunshine.

In training, many contrivances may be adopted, with wire, &c., for supports. I will describe a very simple mode. I will suppose that the stem is high enough for the lower branches of the future tree. Well, the plant is held carefully, the old temporary stake removed, and a stout one, fully half an inch in diameter, is inserted firmly in the same place, and as much higher above the lower branches as we wish the point of the tree to be—say some 15 inches above the lower branches. Well, after tying the stem securely to the stake, the next operation is to make that secure in the pot, so as to carry the weight of the future head; and no simpler plan exists than taking two pieces of wire at right angles from the stake across the rim of the pot, and fastening them there. Then two holes at right angles a little apart from each other about the level of the lower branches—say 18 inches from the pot—will do for putting through two stout wires like the spokes of a wheel. A wire fastened to the points will form the circumference, and lesser wires between will furnish the means for tying the branches. Six or 8 inches higher up other two wires should be inserted for a smaller circle, and thus the orbicular pyramidal head may be easily secured. There must be regular stopping and training, and nipping-off of all flower-buds until the head is formed, and then each shoot may bloom as it likes.

When the head is forming, and also when in bloom, clear manure water, and not too strong, may be pretty freely used, except in very dark weather in winter. To keep the plants long healthy and producing abundance of bloom, no bloom should be allowed to remain when it is old or showing signs of seeding. One truss with seeds swelling will injure the plant more than a

score of half-opened trusses. This continued pruning-away of every flower when past its best, even though the point should be fresh, is the secret for keeping plants long in health. By such means we have seen a plant of common Mignonette grown in the common way, or hanging over the pot, very good after it had been in the same pot seven years. When these tree Mignonette plants are a full mass of bloom at one time, this thinning of flowers must be done freely if the plant is to keep on long afterwards. By this free thinning, stopping and training in summer, and fresh surfacings of good soil, the same plant will continue for years; but there is so much trouble in keeping the soil in a healthy state in such large pots through the winter, that generally it will be the best plan to sow and grow one season for blooming during the earliest part of the next.

When I was fond of such plants I used to grow some as pyramids—that is, the base of the cone on a level with and falling over the rim of the pot, and the plant gradually lessening in width to the apex. Such plants from 15 to 20 and 2½ inches in height are very pretty. The main features of management are the same, with the exception of securing the necessary and right-placed side shoots; and to produce them the stem had sometimes to be stopped, as there was little risk of that not getting up.

The above remarks, however, apply only to what are generally called tree Mignonette plants. There is but one little point concerning them which I have overlooked, and that is carefulness in watering if the last shift should be a large one. In that case only the new soil in proximity with the ball and the ball itself should be watered, and the bulk of the new soil at the sides of the pot should not be deluged until the roots are working in it. This rule applies to all large shifts, as otherwise the soil is apt to become soured; and if so, the Mignonette trees will not flourish.

R. FISH.

THE FLAVOUR OF FRUIT.

In writing of the Warden of Winchester's garden, "D." of Deal, tells us that Mr. Weaver, "like most practical men, has a contempt for fruit trees in pots," and that "the fruit is poor in comparison with that grown on trees planted out." When will there be an end of these baseless opinions given by *soi disant* "practical men?" Ah! when?

I have a great respect for the abilities of Mr. Weaver, and for his character generally; but I cannot resist telling him that I am also a practical man, and that I know his opinion as given above has no foundation whatever. Why is "Mr. Rivers, of Sawbridgeworth," excepted, when writing of failures in orchard-houses? There are hundreds of gardeners much more clever, practically, than he is, and able to do what he does.

He has, however, one quality which carries, and has carried, Englishmen through many ill-organised plans and many scrapes, and made them triumphant in so many quarters of the world—the most dogged perseverance; and if the principle of any mode of culture is sound, perseverance must in the end triumph. Thus it is, that in spite of the prejudices of many men, orchard-house culture is annually spreading and triumphing.

I am quite aware that I need not tell such men as Mr. Weaver that the flavour of fruit, barring extreme sunless seasons, is entirely under the control of the gardener. A clever man can command flavour; a dull man, when he finds his fruit flavourless, makes idle excuses, which should never be listened to.

During last summer I had numerous French fruit-growers visiting me, and they were all struck with the (to them) new idea—the culture of Peach trees in pots, and, I may add, equally delighted; for although in the greater portion of France Peaches do not require the summer climate of the orchard-house to ripen their fruit, it was the immunity from spring frosts, often so destructive in their country, that delighted my French friends. Well, they were, of course, anxious to taste the fruit. I remember gathering some fine specimens of the Noblesse Peach from a tree in a pot, which they declared *exquisite*, and equal, if not superior, both in size and flavour to any they had ever eaten in France. I had, in truth, commanded them, as it were, to be good, and they were good—and why so? Because they had been thinned severely. This is the control I have alluded to.

If a tree trained to a wall be allowed to ripen—say ten dozen of fruit, when five or six dozen only should have been left, they, although they may be of a fair size and colour, suffer in flavour to an extent scarcely credible. It is the same with potted trees;

they are in most seasons, and more particularly this season, crowded with fruit. Now, if a Peach tree five or six years old be suffered to bring to maturity five or six dozen of fruit when only three dozen should be left to ripen, their flavour will be most inferior; and then men who when prejudiced look only at the surface of things, cry out, "How can you expect good fruit from trees in pots?" Such are thy ways, O Prejudice!—the peculiar attribute of the cultivators of the soil, and I fear also of some of the cultivators of the arts and sciences. It is like "the old man of the sea,"—it clings to us, it will not be shaken off. In the case of Sinbad the more he was shaken the closer he clung to his victims, and nearly choked them by entwining his legs round their "throats." In like manner does prejudice too often strangle the working of our brains.

To return to our fruit. How often has the gardener had occasion to complain of his Pears not being good, although produced by fine trees trained against walls? He complains of the season; but it is in most cases owing to the trees being allowed to bear just double the number they ought to have done. It is the same with Plums and Apricots, and, indeed, all kinds of fruit, as well as that of orchard-house trees. I could illustrate this by several cases, but one will do.

In 1861 I had a very thin crop of a favourite sort of Plum, of which a large number are annually preserved. During the winter of that year, and till late in the spring of 1862, these preserved Plums were very frequently on the table, their aroma on a tart or pudding being opened was most delicious. Last year the crop of these Plums was so abundant as to hide the leaves. Thinning was not thought of, as the trees were so numerous. The usual quantity were preserved, and have been in use up to the present time. They are perfectly sound and good, but the fine aroma peculiar to them in seasons when they are thin on the trees is entirely wanting. The following ought to be inscribed on every wall, and in every fruit and orchard house:—By thinning you make indifferent fruit good. By crowding you make good fruit bad.

With regard to trees in pots, and trees planted out in orchard-houses, I have charming specimens of both. I like both modes of culture, but the perfect control exercised over trees in pots by the facility of removing them to force or retard them, or the great pleasure of placing a tree or trees full of fine fruit in the entrance-hall, so that your friends may see the fruits of your labour, is so gratifying that no caviller can once arrest the progress of pot-culture. The oddest thing is that men who oppose this description of culture have never gone into it, but have merely skirmished; and, after a faint attempt at a charge, have been repulsed by their old and cherished friend Prejudice, who always keeps his bayonet fixed and pointed at their brains, ready for action if they try and release themselves from his shackles.

A few words more about thinning fruit and I have done. If very fine and high-flavoured fruit are wished for, a tree capable of bearing three dozen of medium-sized Peaches should be allowed to bear only twelve or fifteen. This thinning is terrible work for the amateur—it is like drawing a tooth, and every fruit that falls to the ground creates a pang; but it must be done. A small sharp penknife is the best implement to employ, and is much better than tearing off the fruit with the finger and thumb. A well-formed Peach or Nectarine tree, be it bush or pyramid, with its fruit properly thinned and nearly ripe, is one of the most beautiful objects the skill of the cultivator can produce. No Camellia, or Orchid, or Rose tree can be more so. Yet this is an object for which some gardeners "feel contempt!"

What "a heap of words" has that paragraph written by "D." of Deal, called forth! I have only to apologise for my attempt to show that contempt ought not to be felt for anything in nature that the skill of a persevering good gardener can make interesting and beautiful.—R., of S.

SALE OF ORCHIDS.—On the 8th Mr. Stevens, at his Auction-rooms, King Street, Covent Garden, disposed of a very superior collection of established Orchids, some the property of a gentleman, and others recently imported. All the lots, 195 in number, realised good prices, but we can only afford space for particularising a few of them:—Vanda Lowii, strong plant, £9 15s.; *Ærides Schroederi*, very fine young plant, £16; *Cypripedium caudatum*, good plant, £7 10s.; *Phalænopsis Schilleriana*, fine young plant, £11; *Cypripedium hirsutissimum*, good plant, £5 10s.; *Cymbidium eburneum*, true, fine plant, £15 10s.; *Saccolabium species nova*, Philippine Islands, £5; *Cattleya Trianaei*,

extra fine, £5; *Cypripedium Stonei*, new and rare, £5 15s.; *Cypripedium species nova* (Veitch), very rare, good plant, £10 10s.; *Europedium Lindenii*, fine plant, £6; *Trichopilia suavis*, strong plant, £6; *Trichopilia crispata*, the finest of all the *Trichopilia*s, splendid plant, £25 10s.; *Dendrobium luteiflorum*, strong plant, undoubtedly one of the finest *Dendrobium*s in cultivation, £26.

LIST OF ANNUALS.

BEING a grower of annuals, &c., for a London house, I beg to add a few more names to the list of your correspondent of Newport, in the *Journal* for March 31. They are annuals which I think are well worth a place in any garden.

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| 1. Aster, cockade or crown. | 27. <i>Lupinus nanus</i> and others. |
| 2. <i>ranunculus-flowered</i> . | 28. <i>Nemesia compacta elegans</i> . |
| 3. <i>Acrocinium roseum</i> . | 29. <i>Nigella hispanica</i> . |
| 4. <i>Calandrinia speciosa</i> . | 30. double Roman. |
| 5. discolor. | 31. <i>Obeliscaria pulcherrima</i> . |
| 6. <i>Calliopais tinctoria</i> . | 32. <i>Enothera Drummondii</i> . |
| 7. <i>Callirhoe pedata</i> . | 33. <i>bistorta Veitchiana</i> . |
| 8. <i>Cerinthe gymnantra</i> . | 34. <i>Lamarckiana</i> . |
| 9. <i>Centranthus macrocephalus</i> . | 35. <i>Oxalis rosea</i> . |
| 10. <i>Chenostoma polyantha</i> . | 36. <i>Petunia</i> , Buchanan's blotched. |
| 11. <i>Clarkia elegans rosea</i> , double. | 37. <i>Podolepis gracilis</i> . |
| 12. <i>pulchella integrifolia</i> . | 38. <i>chrysanthos</i> . |
| 13. <i>Collinsia bicolor</i> , pure white. | 39. <i>Poppy Carnation</i> (in six varieties, double). |
| 14. <i>Collomia coccinea</i> . | 40. <i>Sanvitalia procumbens</i> . |
| 15. <i>Cosmidium Burridgeanum</i> . | 41. <i>Scabiosa</i> , fine German mixed. |
| 16. <i>Datura ceratocaulon</i> . | 42. <i>stellata</i> . |
| 17. <i>Didiscus coruleus</i> . | 43. <i>Sedum azureum</i> . |
| 18. <i>Erysimum arkansanum</i> . | 44. <i>Sphenogyne speciosa</i> . |
| 19. <i>Helichrysum macranthum</i> . | 45. <i>Statice Bonduelli</i> . |
| 20. <i>brachyrhynchum</i> . | 46. <i>Suitan</i> (three varieties). |
| 21. <i>Hibiscus africanus major</i> . | 47. <i>Valerian</i> , garden (two varieties). |
| 22. <i>Thunbergi</i> . | 48. <i>Verbena aubletia</i> . |
| 23. <i>Larkspur</i> , branching tricolor. | 49. <i>venosa</i> . |
| 24. double white. | 50. <i>Whitlavia grandiflora</i> . |
| 25. <i>Lobelia gracilis compacta</i> . | |
| 26. <i>Linaria bipartita</i> . | |

8 and 31 are more curious than pretty, but I think are worth growing; and 16 for its beautiful scent in the evening, a long way off. 3, 19, 20, 42, 45, are all very pretty; also noted for dried flowers for winter bouquets. 43 is very pretty on rockwork; 18, very showy, more so than *E. Peroffskianum*.

You say that 41 in your correspondent's list from Newport, you are not much acquainted with. It (*Oxalis tropaeoloides*), makes a very nice edging for beds, &c., having very dark brown foliage and small yellow blossoms; but once get it in the bed and you cannot destroy it, it seeds so heavily. 49 is very handsome, but so very delicate that a shower soon spoils it. 15 is a compact plant with small golden flowers.

I should like to see annuals grown more widely; I think there are so many really very beautiful and easily grown. They do not require that nursing that many of our flowers in beds at the present time demand.—S., *South Weald*.

THE FIRST IMPROVER OF THE PANSY.

I PRESUME that your respected and practical correspondent, Mr. Robson, has not grown grey in his profession, as in his paper on the subject of the Pansy, No. 105, March 31st, he says, "It is impossible to say at what precise period the parent of our garden varieties of the Heartsease or Pansy first attracted the attention of some zealous and far-seeing florist." I have been an amateur for more than fifty years, and can well remember the introduction of the Heartsease.

The Heartsease, though a native of Britain, was never cultivated in order to render it a florist's flower, till taken in hand by Mr. Thomson, of Iver, Bucks, and by him was brought into admiration; and from his original stock have all the beautiful varieties of the flower been produced, and in the south and west of England he was called the father of the Heartsease.

Mr. Thomson was gardener to the late Admiral Lord Gambier, who resided at Iver, Bucks, near Uxbridge; and Mr. Thomson says, in a paper now before me, that in 1813 or 1814, Lord Gambier brought him a few plants collected in the fields near the mansion at Iver. They were the yellow and white, and his lordship requested him to cultivate them. "Having done so, it was soon discovered that a great improvement was effected in the flowers, and this led to as many other sorts being collected as could be discovered in the neighbourhood. About four years after this commencement I had raised many seedlings from the originals; and one which took Lord Gambier's fancy was named

Lady Gambier, another George IV., a third was called Ajax. The first good-shaped flower was named Thomson's King."

At the time Mr. Thomson was making these improvements in the Heartsease, I resided some six or seven miles from the place, and often and great was the pleasure to go over his seed-beds and watch his colony putting forth their beauties for future fame, I can conjure them up before me while I am now writing, even at this distance of time.

At that time the only mark in the eye of the Heartsease was a few dark lines, and the dark eye which is now considered one of the chief requisites of a first-rate flower had never been seen, or even contemplated. Nor did Mr. Thomson take any merit to himself for this peculiar property; for one day having a chat with him on the subject, and complimenting on the same, he said, "It was entirely the offspring of chance. On looking one morning over a collection of Heaths which had been sadly neglected, I was struck (to use a vulgar expression), all of a heap, by seeing what appeared to me a miniature impression of a cat's face steadfastly gazing at me. It was the flower of a Heartsease self-sown, and hitherto left to 'waste its beauty' far from mortal's eye. I immediately took it up, and gave it 'a local habitation and a name.' This first child of the tribe I called Madora, and from her bosom came the seed which after various generations produced Victoria, who in her turn has become the mother of many even more beautiful than herself."

Thus the origin of the cultivated Heartsease; and so many varieties did Mr. Thomson raise, that he has told me he was often forced to go to Shakespeare for a name for them. Since his time so many persons have carried on the cultivation that the varieties are now almost endless.

It is now more than twenty years since I have heard of Mr. Thomson; but, if still in the land of the living, I hope he is receiving the reward of his perseverance and industry.—DAHL, *Manchester*.

[Soon after Mr. Thomson had thus improved our native Heartsease, Mr. Archibald Gorrie adopted this pretty flower as a pet. He has recorded that about 1824 he received two varieties from Mr. Brown, of the Kinnoul Nurseries, with an injunction to pay attention to their culture. He raised many varieties from them, and the names of some of the best will be found in Loudon's "Gardener's Magazine" for 1832. Mr. Gorrie was the first, we believe, to obtain for the Pansy admission to the rank of a florist's flower, and with great difficulty he secured its introduction into the schedule of the Perthshire Horticultural Society.—Eds. J. OF H.]

THE TRUE GILLIFLOWER.

HAVING heard sometimes the Stock, and sometimes the Sweet William, called "Gilliflower," would you tell me which is the "true Gilliflower?" Also, what is the botanical name of the common Wormwood?—A NOVICE.

[The true "Gilliflower" is the Carnation. The Stock, it has been said, was called the "Stock Gilliflower," because it was sold chiefly in "Stocks Market," the old herb-market in Bucklersbury; but Dodonæus states that in Holland it was called the Stock Violet (stemmed Violet), and that certainly had no reference to the English herb-market. It seems more probable that the term "Stock" was applied to distinguish it by its habit of growth from the Carnation or Gilliflower. We never heard of the Sweet William being called the Gilliflower. The botanical name of the common Wormwood is *Artemisia vulgaris*.]

IS NIEREMBERGIA GRACILIS HARDY?

I HOPE for a reply in the affirmative, knowing as I do that it will stand any moderate winter in a partially sheltered border entirely unprotected out of doors. Indeed, I never could have brought myself to the belief that this small, graceful-habited plant could have assumed so striking an appearance had I not seen it. Let the reader fancy to himself a plant of this bright little plant, some foot and a half in diameter, covered with a mass of fully expanded blooms, in the moderately heated rays of the sun upon a forenoon in early June, and count side by side some eighteen or two dozen of the same. I can truly say that the effect is most pleasing.

It may be worth while to try this upon a moderately dry sheltered spot. Seen as above, they were planted in one of

those narrow borders fronting a stove; trained against the low front wall of which were nice plants of some of our most shy-blooming Tea Roses. Could the Belladonna Lily be grown in the same border? How it would enhance the appearance of the flowers if their naked lower-stalks were partially hidden amid the gracefully growing foliage of this charming little plant.—W. EARLEY, *Digswell*.

APRICOTS IN ORCHARD-HOUSES.

I PROMISED to give the result of an experiment with Apricots under glass.

Some of your readers will recollect I suggested trying the effect of sprinkling the shoots and blooms of Apricots early in the day with water from the fine rose of a watering-pot, thinking it might be beneficial. I selected several trees, and watered them almost every day before and during the time they were in bloom. Now for the result. They are neither better nor worse than those which have never been sprinkled. There is so much fruit on all the trees that a large proportion must be pulled off. Mr. Brown, of Lenton, near Nottingham, who has been trying the same experiment, says he is quite satisfied that an occasional sprinkling has proved beneficial to his trees; I have only proved it is not injurious.

I hope Mr. Robson will not consider me influenced by interested motives alone in advocating orchard-houses. I can assure him there is such a thing as riding a hobby for pleasure as well as profit. I have taken more interest in my fruit trees in pots, and derived more pleasure from their management than in any other culture.

Last year was the only season when I had a partial failure with Peaches and Nectarines, and two of the best gardeners in this neighbourhood—Mr. Ingram, of Belvoir, and Mr. Speed, of Mansfield—said I had as good a crop as could be expected on the average. Even this partial failure was partly accounted for, many of the trees having been lifted from the borders of an old orchard-house, in which they had been growing for two years, and potted only five months before they came into bloom.

If Mr. Robson will pay me a visit I will try and make it a pleasant one to him, and do not despair of making him a convert to orchard-house culture. If my fruit from potted trees are as good as usual, he will not call them small (I weighed one last season, $7\frac{1}{2}$ ozs., a Walburton Admirable), and I am sure he will not find fault with the quality.

In 1861 a nobleman's gardener made me an offer of 7s. per dozen for my Peaches, but I did not sell them, as I wished those who came to see them to have an opportunity of tasting. From fifty to a hundred dozen of Peaches and Nectarines have been eaten annually by my visitors and friends, and I never yet met with more than one person—a gentleman who had resided at the Cape, and who was, perhaps, very thirsty when he ate Peaches there—who ever pretended they had eaten better, whilst scores have declared they had no idea of what a Peach ought to be before tasting one in an orchard-house.

I think those who speak against growing Peaches in pots can have no idea how many persons differ from them in opinion. I appeal to any of the great nurserymen if the sale of Peaches and Nectarines has not doubled at least since orchard-houses were erected. I know that we sell far more than double; and, whatever some persons may think, I have no doubt twice as many trees will soon be required.

Now, Mr. Editor, please tell us, who believe in the orchard-house, what more can we do to convert the infidels? We ask all to come, and see, and taste. We refuse to sell our specimen trees, because persons would say they had died and had been replaced, so we keep the same trees we commenced with: can we do more?

In conclusion, let me say Pears are not grown in my house, because they were never good with me. The few Plums grown bear very constantly and profusely, and are little different in quality from those grown in the open air. Apricots have been rather uncertain bearers; they have never totally failed, though they nearly did so last year. They have often been a full crop. The quality has always been greatly superior to wall Apricots, so much so that if they were more uncertain they would be worth growing. I never fear a failure in Peaches and Nectarines, as the crop was a good one in 1861 in spite of the sunless summer of 1860; and the worst spring for fruit-blossoms ever known perhaps, that of 1862, was followed by a half crop of first-rate quality.

If I live, some of my Peaches shall find their way to the Fruit Committee and receive a verdict from the honourable members. And if Mr. Robson pays me a visit, which I hope he will do, he will not find the pots fast to the ground!—J. R. PEARSON.

[We recommend Mr. Robson to accept the invitations of Mr. Rivers and Mr. Pearson, and to dine with each in the height of the Apricot season; for we can promise him that he will find first-rate Apricots on their tables from their orchard-houses, and we can promise his hosts that they will find their guest anything but a man obstinate and prejudiced.]

We have cultivated Vines, Peaches, Nectarines, and Apricots in an orchard-house, and succeeded with all. Certainly finer Black Hamburgh and Champion Grapes and Moorpark Apricots we never desire to have upon table. Of course the produce per tree was small.—EDS.]

MERITS OF ORCHARD-HOUSES.

AS "D.," in his letter in last week's JOURNAL OF HORTICULTURE, says that most practical men have a contempt for fruit trees in pots, and follows up by a sneer at orchard-houses and their originator, perhaps you will allow me a few lines to give you my experience of their success, at least as regards Peaches and Nectarines, and I think I shall show that they are by no means such failures as he would intimate them to be.

In the summer of 1859 I built an orchard-house of clay-lump at an expense of about £28, 20 feet 6 inches by 12 feet, with the border returned at the further end. I should build another one somewhat cheaper and with various slight improvements. I stocked it from the Sawbridgeworth Nurseries at an expense of £6 1s., with sixteen Peaches and Nectarines, four Apricots, three Plums, and one Cherry; to which I afterwards added four Vines—on the whole too much by a quarter for the house.

The Plums, Vines, and Cherry I may dismiss at once, with an acknowledgment that I could get no blossom to set on the Plums and Cherry, and but few bunches and those very poor on the Vines. The Apricots have not done well. I have never had more than six or eight on a tree, those, however, large and well-flavoured. The Peaches and Nectarines have, however, been a great success. The first year I averaged somewhat more than a dozen on each. In 1860, when there was a large quantity of wall fruit out of doors everywhere, but utterly flavourless from the continued wet, I had an average of about two dozen on each plant—far better flavoured than out of doors, as I had the regulation of the water-supply in my own hands.

Then came the fearful winter 1861-2, which in this neighbourhood killed-down many exposed trees, while those which did survive bore no fruit on their badly-ripened wood. I, however, in the orchard-house had a supply somewhat larger than the previous year, no tree having been at all damaged by the frost. Last year I gathered from these sixteen trees nearly five hundred Peaches and Nectarines, one-third, perhaps, smaller than they should be, but the remainder of good size and flavour. In the latter point I can, in average years, perceive no difference between out-door and in-door fruit, nor in the former point where not more than—say, thirty fruit are allowed to swell on a moderate-sized tree.

I think, then, that as far as these trees are concerned they are by no means a failure, but decidedly a very great success. But "D." will say, "You have a clever man whom it pays to give a large income to" (I quote his own words). I am, or was till six months ago, my own head-gardener, and no experienced amateur either, but till I had my plants and Rivers's book I had never pruned a Peach, nor knew the difference between a leaf-bud and flower-bud; and I may say in passing, that it is a great pity that trees will never grow according to the descriptions and diagrams by which the tyro is instructed how to prune them.

My aide-de-camp was one of those hybrids between groom and gardener, whose qualifications consist in knowing very little of either business. However, he would do as he was bid.

In conclusion, I would strongly advise every one who wishes for a certain crop of good fruit and cannot afford much space, nor the expense of a large wall, and does not wish to wait for his crop for four or five years to build such an orchard-house as he can find room for, to buy Rivers's book and set to work by it, putting-in only Peaches and Nectarines. Ten minutes in the morning and half an hour in the evening, with one day

in the autumn, and another—or say two—in the spring, are the attendance it will require. He cannot know less about fruit trees than I did when I began; and if he fails, some people are very clever at failing, let him not come to me for sympathy, as I shall certainly tell him it is his own fault.

It is foreign from the main object of an orchard-house to enlarge on its convenience as a harbour for plants not quite hardy—*Rhododendron ciliatum*, *Vallota purpurea*, Tea-scented Roses, *Fuchsias*, &c.; but I have found it exceedingly useful for such purposes.

My trees—with one exception, overdosed with Gishurst and not likely to set more than a score of fruit—are now masses of blossom, and the Apricots setting better than they have done.—*DUCKWING*, ——— *Rectory*.

RATING NURSERY GROUNDS.

IN No. 104 you very kindly gave us some valuable information as to the liability, or, rather, non-liability of nurserymen's greenhouses and hothouses to be rated. Will you now give us a few words as to ground employed for raising trees?

My case is as follows:—I have some land planted with young nursery stock without buildings of any kind on it. It is bounded on the north by arable land, and on the west by land of the same description, divided by the usual fences of the country hedge and ditch. This arable land is occupied by farmers, and is assessed at—say, in round numbers, 30s. per acre. The Assessment Committee of the parish, much impressed with the value of my stock, wish to assess my land at £4 10s. per acre, or 200 per cent. more than the land adjoining. This I resist, and say, I think, justly, that although my land has been improved by deep digging so as to be worth to any ordinary tenant 10s. per acre more than the adjoining land under the plough, it ought not to be assessed at the high rate they name, the neighbouring land being of exactly the same nature as mine, both in surface and subsoil. I am well aware they have no business with my stock, but it seems they are impressed with the idea that I get a much larger profit from my land, and that, consequently, it ought to pay more to the poor's rate.

With respect to the land on which my glass houses stand, one acute reasoner suggested that a greenhouse or hothouse should be considered as a manufactory; and that as a manufacturer, on building a factory and placing in it a steam-engine to be employed in his business, would be at once rated for it, so in like manner a nurseryman building a propagating-house and using hot water to propagate plants, was a manufacturer, and his house or houses should be rated as factories. This is a new idea not likely to hold water, but ingenious, and worthy of one of "the wise men of the east."

The gentleman who ushered it into the world ignored entirely the precedents you quote in No. 104. A few words from your experienced pen will at the present moment be of great service to many of your readers.—*A NURSERYMAN*.

[No mistake is more commonly made by parish officials than concluding because A makes more profit from an acre than is made by B from an acre of the same land, that therefore B should not pay so much as A; the absurdity of which is at once further shown by the consideration that if such were the law, then a man's skill and industry would be the measure of rating. Such, we think, is not the law, and we further think that "A NURSERYMAN'S" ground, as described, can only be legally rated at what it would let for to a neighbouring farmer after all the nursery stock was removed.

The rule for rating manufactories and town trades is not at all applicable to cultivators of the soil, and has long since been so determined.—*EDS. J. OF H.*]

A FEW DAYS IN IRELAND.

LYONS.

(Continued from page 263.)

HAVING felt much interested in the state of the first vinery we entered, we obtained the following details, which show that often much may be well done, and yet the good be neutralised by some trifling misconception or error of judgment. The strong character of the wood showed there was plenty of nourishment.

The tendency to luxuriance, rather than extra fruitfulness, and the liability to shanking and imperfect colouring, led to the conclusion that the roots were too deep, or in stagnant moisture more frequently than was good for them; and yet almost everything had been done, and done very well, to prevent such a thing. A drain 7 or 8 feet deep went along beneath a walk in the front of that border; and at a depth of from 30 to 33 inches the bottom of the border had been securely flagged to prevent the roots going down into ungenial soil, but with no open rubble between the soil and the flagstone. To make matters more sure, and, as if flagstones were of no cost, there were some 9 inches of stiff soil beneath that flagstone, then another flagstone bottom, then a good depth of open rubble beneath that, and most likely other floors of flagstone—enough to have done many borders, if flagstones were deemed essential; and we have nothing to say against them if on a slope, and rubble above them, so as to prevent water lodging on them. Well, how was it possible that the Vine roots should be exposed to extra moisture in such an expensively-made border? From several trivial causes. The drain had been securely built with mortar, and the better the mortar the less free access would the moisture of the border have to it. Then, again, as if to secure this closeness properly, a bank of rather stiff clay had been packed between the drain and the border, and no direct openings whatever existed between the border and the drain. The bulk of the roots were close to the flags, and many had penetrated the wall of clay, and had descended and run along the surface of the close drain.

The roots being carefully lifted, we might have been satisfied with placing small drain-tiles on the flagged bottom, communicating directly with the close drain, and covered these and the flags with from 6 to 9 inches of rubble; but Mr. Lind did more than this—he broke through the bottoms of flags every 4 feet or so, took four-inch drain-tiles right across into the main drain by openings, covered these cross drain-tiles with 2 feet of open rubble, covered the flags with 9 inches more, and put a good thickness of stones over the main drain, so as to let moisture down freely to the openings. He then, in partly fresh soil, replanted his Vines nearer the surface, the border being from 18 to 21 inches deep, as forming fresh roots quickly was a chief object. The soil used was without manure; but with such drainage manure water may be used to any extent in summer. The results in handsome fruit, well coloured and free from shanking, and good firm short-jointed wood, are everything that can be desired. The earlier such lifting and replanting are done in autumn the better, even if shading and syringing should be resorted to, to prevent the leaves flagging. The heat of the soil should also be kept in by covering early with litter; and in the following season Mr. Lind farther encouraged root-action by stopping several joints beyond the fruit, and encouraging more laterals than usual, until the balance between roots and branches was thoroughly restored.

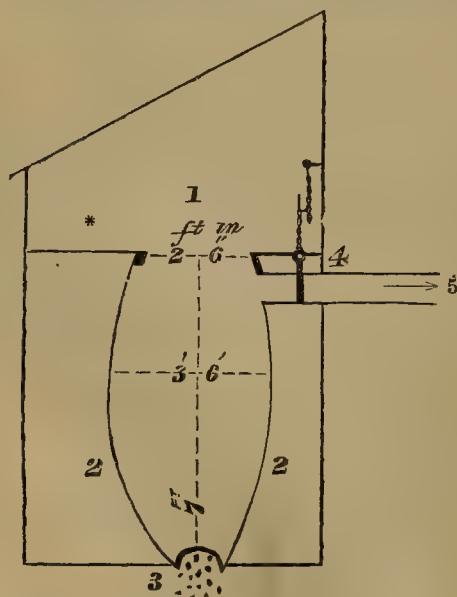
We might detail other more simple modes of bettering the condition of Vine roots, such as making openings in such a close drain, and filling up with rough stones to near the surface after moving the clay bank; or we might describe another case, where Vines were planted in the front of the house inside, where little or no attention had been given to drainage, and where, from the tops of the arches for letting the roots out being 18 inches below the outside surface, the roots had chosen to march right down instead of going outside at all; and how these Vines were wonderfully improved by lifting these deep perpendicular roots, removing the sour soil in the arches, raising the openings so as not to have the arch more than 6 inches below the surface of the border, and taking the roots through at the top of the heightened arch and packing them in fresh soil. But we pass these with less regret, as there has been no end to reiterated advice on such matters, and great stress laid when planting inside, not only that the openings for the roots should be near the surface, but that the inside border be higher than the outside one.

Although it was getting dark, the impression of the glass houses conveyed to our mind was, that the same care was not bestowed upon their external appearance and condition as was observable in other departments of the demesne that came under our notice. This, however, is far from being uncommon in many large places, where, if a glass house is put up, it is supposed to need no more looking-after for a generation; and if we blue aprons do say anything about drippings and inundations from worn-out or imperfect glazing, we are set down as a grumbling lot that nothing will satisfy; and in truth we

are not easily satisfied, and many more little things might be done to satisfy our desires, but for an idea that gentlemen have, that if they admit so much as our little finger they may make up their minds to let in our whole hand.

The main range is 175 feet in length, consisting of Peach-house, stove, small greenhouse, and three vineries. The height of these houses at back is $12\frac{1}{2}$ feet, width $11\frac{1}{2}$ feet, and height in front $3\frac{1}{2}$ feet. There are also a very nice forcing-pit 36 feet in length, and a Melon-pit 44 feet in length; and though last, not the least valuable, there is a capital span-roofed orchard-house 80 feet in length, 20 feet in width, 10 feet in height from floor to ridge, side walls $4\frac{1}{2}$ feet in height to the eaves, with ventilators about the middle of the sides. There is a door in the centre of each end, and over the doorway a ventilator 1 foot by 2 feet, and that with the openings in the sides is found quite sufficient. The house inside has a bed along the centre 7 feet wide, divided into two by a cross-walk, where there is a cistern for water and a force-pump. There are also a border on each side, 2 feet 10 inches wide, and a walk 3 feet wide all round. These borders are raised above the pathways 16 inches. On each central bed are two large Peach trees planted out, and the rest for filling-up are grown in pots. On the side-beds several trees of Peaches and Plums are planted out, and the rest are retained in pots, and all were looking very promising. When red spider makes its appearance at all, Mr. Lind generally uses the sulphur and lime remedy recommended by Mr. Rivers, but says it must be used cautiously, and that the leaves, &c., cannot well be too dry. As a wash for fruit trees in a dormant state, he uses a solution of lime fresh from the kiln and flowers of sulphur, and is seldom troubled with any insects. The wash crumbles and peels off during the season, and no insect likes to come near the dust that is left. We should not wonder if, after after all our fine mixtures, we go back again to some of the old and simple ones.

The mode of heating the houses is well deserving of notice. It is not by common flues and furnace, nor by any system of hot water or steam, nor yet by any combination of Polmaise, or any modification of the hot-air chamber of Mr. Kidd, or of the killogie once propounded by that natural genius, Mr. Alexander Forsyth, who seems of late to be keeping his light under a bushel. No, by none of such means, but simply by old-fashioned flues heated by limekilns. Under Mr. Lind's supervision the system answers admirably; the plants in the stove, &c., looked in excellent health, and Peaches are generally gathered in the beginning of May, and Grapes cut in the beginning of June;



1. Open shed over each kiln.
2. Solid stone work.
3. Eye of the kiln.
4. Damper.
5. Flue passing below the floor of the houses to be heated.

Strawberries, &c., being obtained proportionately early, though they could also be had earlier if required.

A great deal of lime is wanted on the estate, and the system has been adopted as one of great utility and economy, it being believed that the houses are heated much more cheaply than they otherwise would be, and that the lime is a substantial gain besides.

The annexed is a section of one of the limekilns, which are only used when heat is wanted for the houses, showing the open shed over it, and the flue passing at first underneath the ground level. The * marked on section represents the place where the workman wheels his fuel and limestone, and tilts them into the kiln. Each kiln is 7 feet deep, tapering to a narrow base at bottom, where the eyehole is placed for removing the burnt lime with a shovel in the usual way. The middle of the kiln is $3\frac{1}{2}$ feet wide, somewhat egg-shaped, and the top is $2\frac{1}{2}$ feet wide, and covered with a stout iron griddle or lid 1 inch thick. The sides of the kilns inside are lined with firebrick, which is supposed to last at least four years without any repairs. When heat is wanted the kilns are never out, unless when such repairs are needed, and Mr. Lind spoke of one that had been worked continuously for three years, and never been out, and to all appearance might work on ever so much longer without any repairs being necessary. When heat is not wanted in some of the houses in summer, the kilns are allowed to go out, the object being to make the lime only when heat is wanted. From November, when more heat is required, the lime is very good, and used solely for building purposes. On an average each kiln produces six bushels of lime per day.

The fuel used is cinders and ashes from the mansion, culm, and inferior coal from Queen's County, abounding in sulphur, slack, small coal from the depôt, and braize or refuse from the Dublin gas works, which answers better than any of the others, but cannot always be obtained. The limestone is brought from an estate of Lord Cloncurry's, and is carted to the canal bank for 2s. per ton. From thence the limestone and fuel have to be carted half a mile to the garden. At the canal bank the culm is obtained at 12s., the slack coal at 12s., the braize at 8s. 6d., and the limestone at 2s. per ton. Mr. Lind kindly furnished us with the following data, as a means of judging of the power of the different kinds of fuel, and the value, economically, of the whole process:—

One ton of culm at 12s., will produce 31 barrels of lime.

One ton of slack at 12s., will produce 27 ditto.

One ton of braize at 8s. 6d., will produce $35\frac{1}{2}$ ditto.

The barrel is a local measure holding 11 stone avoirdupois, we think, of lime. The price of lime delivered also at the canal bank, is from 10s. to 11s. per ton. By taking the price of limestone 2s. per ton, the price of braize 8s. 6d., and the value of the thirty-five and a half barrels of lime, at eleven stones per barrel, it will be no difficult matter to arrive at a conclusion on the economical aspects of the question, so as to be worthy of the consideration of those who can obtain plenty of limestone or rough chalk without costing much except the labour.

As to the management, Mr. Lind stated that the kilns were rather troublesome in windy weather, but that otherwise he would as soon have them as common furnaces and flues, and that when managed regularly by one person they constituted a source of scarcely more anxiety than heating houses generally does. It is expected that when at work the kilns will be in good order—that is, the fire well up through them at five o'clock in the afternoon or soon afterwards. Suppose this to be the case, the houses will want looking to about seven, and most likely the heat will want regulating by the damper. At ten o'clock the houses will be looked to again and the heat regulated for the night, which generally leaves the house just warm enough in the morning, as when this attention is given the heat is very regular. If the heat is too much the damper can be put in for a time, and the cover to the kiln moved partly or altogether, just as in a similar case in a furnace we would open the furnace-door. In either case, of course, the extra heat is lost, but in each like the damper is the regulator when there is excess of heat. Our friends who so strongly contend for hot water in all cases, may rest assured there are many modes of heating effectually, if the operators, as in the present case, bring intelligence and a spice of enthusiasm to bear upon the subject.

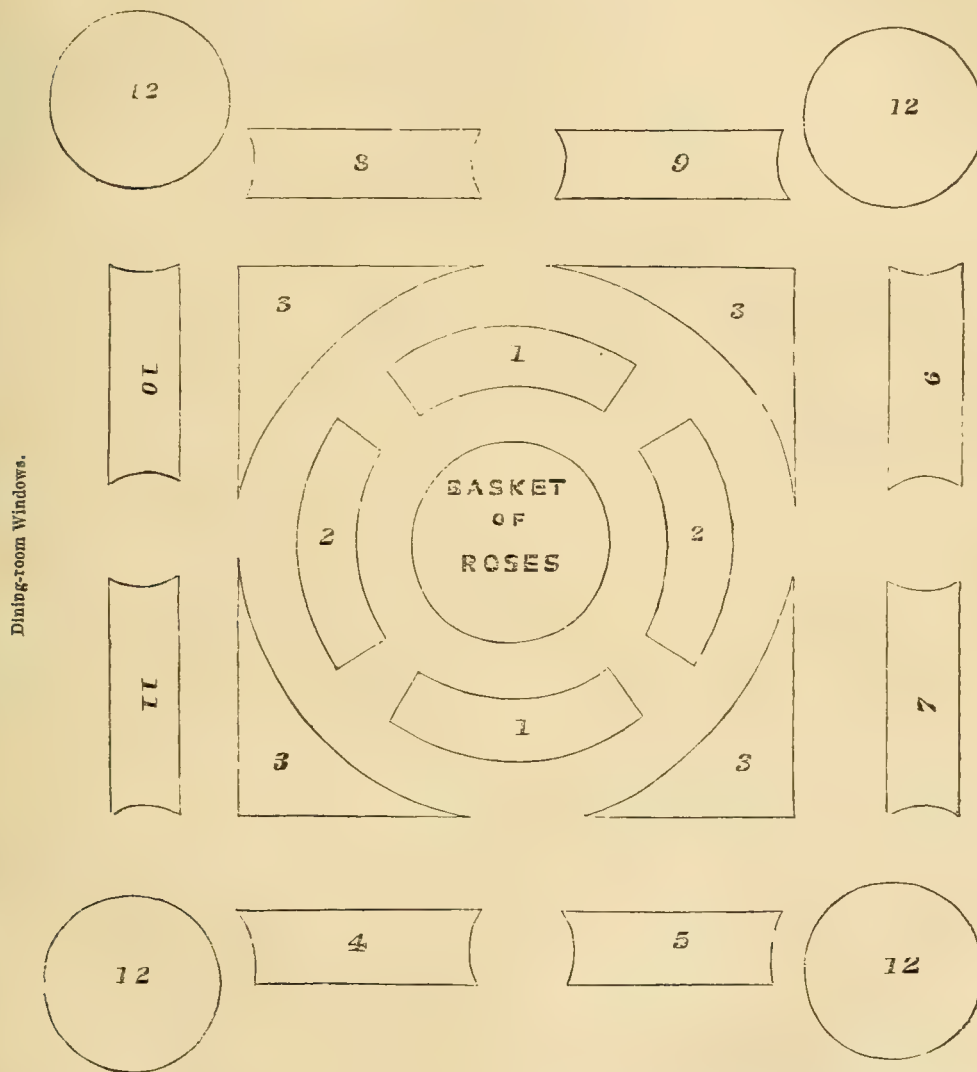
With darkness in the gardens, and a cheering cup of tea from Mrs. Lind, and a pleasant converse afterwards, terminated one of the most delightful and instructive of days in a gardening point of view.

Some friends and unknown correspondents have thought proper to call in question the heading of these sketches, "A Few Days in Ireland." But they are quite correct and consistent, as may be judged from this single day's work. We left Dublin early and spent the morning at Hamwood, the forenoon at Carton, the afternoon at Straffan, and the evening at Lyons. No such amount of work could have been gone through but for the kindness of Mr. Robertson, of Mary Street, Dublin, who not only planned

the routes, but prepared for us in almost every case a most warm and friendly reception. With all that, however, we were tired enough on getting to Dublin; nor is it to be wondered at, that, in our snug room at the Verdun, very sound sleep was prevented by visions of columns and towers, Italian gardens, halls of shells, endless lakes, and the blowing-up of forcing-houses by gigantic limekilns.

R. FISH.

FLOWER-GARDEN PLAN.



DESCRIPTION OF BEDS.

1, 1, Tom Thumb Geraniums.
2, 2, Madame Vancher.
3, 3, 3, 3, Purple King Verbena, edged with Yellow Calceolaria.

4, 5, 6, 7, 8, 9, 10, 11, To be planted ribbon fashion in three rows:—
1st row, Mangles' Variegated; 2nd, Christine; 3rd, blue Lobelia.
12, 12, 12, 12, scarlet Verbena Foxhunter.

THE following remarks are relative to a flower-garden plan sent us by S. E. L.

We admire your arrangement chiefly for its great elegance and simplicity, and heartily wish the mere strivers for variety would take a lesson out of your book. There is only one fault we notice, and that is your large basket of Roses in the centre. It will dull your whole figure in the autumn. Just think of the effect of a ringed bed, or one of Alma with a lilac border. All you can do now is to have a good border round the Roses, and plant a few things among them. For the 3-beds you will, of course, use a low Calceolaria. In the long eight beds, perhaps, according to your arrangements of Mangles', Christine, and Lobelia,

it would be as well to have Christine in the middle, because Mangles' will pin down so nicely to suit the Lobelia. All these eight beds will be relieved by the planting of the 3's and the blaze in 12's; and we should like to see the whole in perfection, to be, if possible, more convinced that a few colours well managed will do wonders. Leaving 4, 5, 8, 9, as above, you might for variety have a little difference in 6, 7, 10, 11—such as Tom Thumb or Boule de Feu, centre; Christine, middle, or Flower of the Day; and Lobelia Paxtoniana, or Verbena pulchella, or Charlwoodii for outside. We notice this, however, merely for variety, convinced that your plan of having all the eight beds alike will look quite as well.

GISHURST COMPOUND.

MAY I suggest to your correspondent "S. P." that instead of condemning Gishurst altogether he should, next winter, try, instead of the eight-ounce solution he used, one of half the strength? This I tried on some of the more susceptible sorts of trees this season in January after the buds had swelled much, with the result of their neither browning nor falling. I think, after the paragraph giving the Van Mons Society's experience, which immediately followed "S. P.'s" note, that the medicine may still be considered valuable, though the dose may have proved too strong in the cases of particular patients. I use 8 ozs. because I find my trees the better for it; but after finding, even in exceptional cases, that the eight-ounce solution had been too strong, I recommended half this strength.—GEORGE WILSON.

THE ROYAL BOTANIC SOCIETY'S SECOND SPRING SHOW.

THIS took place on Saturday last, and the display, especially of Azaleas, was excellent.

Those from Mr. Turner, of Slough, were admirable examples of cultivation, being regularly-grown pyramids, and covered with a profusion of bloom. They consisted of Rosy Circle, Prince Jerome, Admiration, Criterion, Iveryana, and Holford. He had besides in the class for new sorts, Perfection, a bright rose spotted with crimson; President, rosy salmon; and Duke of Saxony.

Messrs. Ivery & Son, of Dorking, had also a nice collection, consisting of Criterion, Baron de Vrière, Iveryana, Louise Margottin, and Adelaide de Nassau.

Mr. Cross, gardener to Sir F. Goldsmid, Bart., and Mr. Todman, gardener to R. Hudson, Esq., Clapham Common, had excellent specimens in the Amateur's Class.

Hyacinths did not afford a great display. Those from Messrs. Cutbush, of Highgate, and Mr. Carr of the same place, were by far the best; and among them were some very good spikes of Van Speyk, Macaulay, Von Schiller, and other kinds which have been frequently noticed in these columns during the present spring.

Cut Roses were again shown in great perfection by Mr. W. Paul, of Waltham Cross, and Messrs. Paul & Son, of Cheshunt. In Mr. W. Paul's collection, which consisted of eight boxes, were some beautiful blooms:—Teas, Louise de Savoie, Eliza Sauvage, Niphetos, Vicomtesse de Cazes, Devoniensis, and Gloire de Dijon; and of Hybrid Perpetuals, Beauty of Waltham, Pauline Lanzeur, Louise Peyronny, Olivier Delhomme (of a glowing purplish-red), and three lovely blooms of Victor Verdier, two of which were just opening. In Messrs. Paul & Son's seven boxes, among the most striking were Narcisse, Eliza Sauvage, Madame de St. Joseph, Louise de Savoie, and Madame Willermoz; and H.P.'s John Hopper, Victor Verdier, Maurice Bernardin, Jules Margottin; and H.B. Charles Lawson, the last a lovely bright colour and very large and full.

Of Pot Roses the only exhibition came from Mr. W. Paul, who had Sénateur Vaisse, with its beautiful bright red flowers; Victor Verdier, large and fine; Catherine Guillot, very fine; and among dark colours Cardinal Patrizzi and Triomphe de Lyon.

Of Begonias there were several collections shown, the exhibitors being Mr. Cross, Mr. Fox (gardener to R. Gibbs, Esq., of Highgate), and Mr. Webb (gardener to J. L. Latham, Esq., of Highgate). The whole of the plants were well grown, but among the kinds shown there was nothing remarkable for its novelty.

Several collections of foliage and flowering plants were shown. Messrs. Lee, of Hammersmith, had in their's Hedera tulipiferum and Cyathea Smithii, the handsome lively green fronds of which were seen to great advantage between the more sombre foliage of a fine *Alocasia metallica* and a handsome specimen *Epacris grandiflora rubra*.

Mr. Williams, of Holloway, also exhibited an excellent collection, in which was a lovely plant of *Cattleya Skinneri* in full bloom, and handsome plants of *Cordyline indivisa*, and *Gleichenia dicarpa*, and *Cyathea exoelsa*. He had besides Azalea Empress Eugénie, which, though a handsomely-shaped plant, and well covered with bloom, had lost many of its flowers, probably from rough carriage.

Good collections were likewise exhibited by Mr. Bull, Messrs. Henderson & Co., F. & A. Smith, and Mr. Cross.

Of other objects exhibited, collections of Amaryllids came from Messrs. Cutbush and Mr. Parker, of Tooting; British Ferns from Messrs. Ivery and Miss Clarkson; and from Messrs.

Perkins and Sons, of Coventry, *Verbena Lord Leigh*, with large trusses of crimson scarlet flowers with a white eye, and which are well represented in the *Florist* and *Pomologist* for March. The same firm had likewise a pretty Cineraria called Rev. S. Widdrington. Stands of cut Camellias were shown by Messrs. A. Henderson & Co. and Messrs. Lee; and of Pansies, among which were some pretty dark selfs, by Mr. Bragg, of Slough. A batch of variegated Geraniums, as Sunset, Mrs. Pollock, and Countess, were shown by Messrs. E. G. Henderson & Son; also *Coleus nigricans*, with blackish-purple foliage; *Genista prostrata*, a handsome trailer, with yellow flowers; and *Cupressus Lindleyana*, with white variegations. Mr. Williams also exhibited *Phalænopsis Schilleriana* and *amabilis*, *Dendrobium aggregatum majus*, *Tradescantia odorata*, with dark red leaves, somewhat resembling those of *Dracæna ferrea*; a species of *Aralia*, with long, narrow spiny leaves of a blackish-green, and blotched at the spines with paler green; the variegated *Aralia Sieboldi*, *Gleichenia dicarpa*, and some other plants. Lastly, Mr. Bull, of Chelsea, had a large batch of seedling Zonale Geraniums, among which were several pretty unnamed varieties, of the merits of which we shall doubtless hear in due time, and several new Petunias, likewise unnamed; whilst Mr. Paul had *Magnolia Linné*, with large flowers, rose tinged with violet on the outside.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE March Meeting of the Entomological Society was held on the 2nd inst., F. Smith, Esq., the President, being in the chair. The Secretary announced a considerable list of donations to the Society's library, from the Royal Society, the Entomological Societies of France, Stettin, and Vienna, the Society of Arts, the Royal Society of Nassau, &c., including an extensive series of the "Annales" of the French Entomological Society.

A number of minute species of British Rove Beetles (Staphylinidæ), belonging to the genera *Mycetoporus*, *Bryophorus*, and *Homalota*, were exhibited by Mr. G. R. Waterhouse, with relative notes and descriptions.

Professor Westwood read descriptions of two new Australian species of Lucanidæ, one in the collection of the British Museum, and the other in that of Dr. Howitt, who had forwarded a very beautiful drawing of it for description.

Mr. F. Bond exhibited a species of the true *Polyommatus Dorylas*, one of the small blue Butterflies which, although long ago figured by Lewin as a British species, had for many years past been rejected from the British lists as a doubtful native. Mr. Bond had received it as a variety of *P. Adonis*, taken with other insects in the west of England. The name of *P. Dorylas* had also been misapplied by Leach to the common blue Butterfly, *P. Alexis*.

The President read a memoir on the various species of Honey Bees exhibited, together with their nests and honey, in the Brazilian Court of the International Exhibition of 1862. Although the European Honey Bee, *Apis mellifica*, had been introduced and become naturalised in North America, no other species of *Apis* was indigenous in the New World; but in South America their place was taken by stingless Bees, composing the genera *Trigona* and *Melipona*, to which another genus had been added by Saint Fargeau under the name of *Tetragona*, but this genus was not considered by Mr. Smith to be tenable. All these South American Bees are stingless. They vary very considerably with reference to the quality of the honey which they make; and Mr. Smith, by an examination of the organs of their mouths (four only of the species having toothed mandibles), showed that the different species must necessarily be appropriated to very different classes of flowers. No fewer than 120 species of these American Bees had been described; and in the collection exhibited in the Brazilian Court, eleven out of the fourteen species of *Trigona* were new to science, as well as both the species of *Melipona*. It had also long been affirmed that several species of Wasps of the genus *Polybia*, including the *Licheguanus* Wasp were honey-makers, and several species of this genus were contained in the collection; but Mr. Smith, from an examination of their nests, appeared to doubt whether they were really collectors of honey, but thought they were rather robbers, which had stolen it from the nests of *Melifera*.

D. MOORE, ESQ., PH.D., M.R.I.A., &c.—It is with very sincere pleasure we learned that Mr. (now Dr.) Moore, the very

able and much respected Director of the Glasnevin Botanic Gardens, has had the degree of Doctor of Philosophy conferred on him by the Senate of the University of Zurich, the Athens of German Switzerland. Dr. Moore has been selected for this by-no-means common honour, by reason of his many and valuable contributions to the advancement of the natural sciences, more especially in that whose fair domain it has been his privilege to put the sickle, and garner a plentiful harvest.—(*Dublin Agricultural Review*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE advantage of applying manure in a liquid state to kitchen-garden crops is so great, that it becomes an important duty to see that none is wasted. A tank in the dungyard or frame-ground would be most useful, and into this tank should be conducted all the drainings of hotbeds, heaps of fermenting dung, green refuse, &c. This will form an excellent dressing for Cauliflowers and Celery, for pouring over Sea-kale and Asparagus beds, Artichokes, and a diluted portion over the roots of Peas in dry weather. Indeed, almost every kind of crop will be benefited by it when in a growing state. None, therefore, should be wasted—a waste which, by the way, is far too common even in this enlightened age. It is grievous to see all the drainage of dunghoops running away and finding an entrance into the earth wherever it can. Sooner than allow this it would be advisable to dig a hole to stop it, if time could not be spared to carry it to the kitchen garden to make the Cauliflowers larger and whiter and the Celery finer and crisper. *Beet*, Silver, sow where it is required. *Broccoli*, make a sowing of the various winter and spring varieties. *Celery*, attend well to the pricking-out of the early sowings, and sow more, both on heat and in the open ground, for middle and late crops. *Celery* is best if kept in a rapidly-growing state, the manure to be rich and to have frequent applications of liquid manure, with a small portion of salt dissolved in it. *Cauliflowers*, keep the surface deeply stirred amongst the open rows, and look out for slugs. Continued hoeing and surface-stirring is a great disturber of such vermin, and will now be required for all kinds of advancing crops. Earth-up those which have stood the winter beneath hand-glasses. *Cardoons*, the seed may now be sown in trenches, where the plants are to remain. The trenches to be about 4 feet apart, and a few seeds dropped in at intervals of 18 or 20 inches. See that *Chilies*, *Capsicums*, *Basil*, *Tomatoes*, and *Knotted Marjoram* are in a proper state of forwardness for planting-out at the proper time. *Carrots*, the seedlings just coming up, as also the seedling *Onions* and *Parsnips*, to have the teeth of an iron rake passed through them to loosen the surface. *Kidney Beans*, sow in a box of sandy soil placed in a cold pit or other convenient place for protection, to be transplanted after a time. *Potatoes*, water and earth-up those in frames. If the main crops are not yet in, lose no time in getting them planted. *Nasturtiums*, sow some seed at the foot of a fence where the plants can do no injury by their rapid growth. *Savoy*, another sowing may be made for late crops. The present weather is very favourable for getting in crops where the soil is of a stiff wet nature, and it will generally be found that by waiting till the ground is in good tilth, the crops are equally early and far superior to those sown when the soil was saturated with wet. As the heads of *Broccoli* are cut remove the stumps, as they only harbour slugs and snails.

FLOWER GARDEN.

Make another sowing of hardy annuals on the borders; at the same time sow a little of each in the reserve-garden to supply vacancies in the summer. All empty flower-beds to be frequently forked over during this month and the early part of next, and add some charcoal or charcoal dust, especially if the soil be stiff; if neither of these can be had, use burnt soil as a substitute. See that *Fritillarias* and *Narcissi* are properly attended to as regards staking and tying. The daisy-rake will now be required upon the lawn once a-week. Proceed with the planting of hardy climbers against walls, trellises, and verandahs. Select some of the most showy species—as *Wistaria*, *Bignonia*, *Caprifolium*, *Clematis*, *Tecoma*, &c. If it is desirable to have some disagreeable object hidden from view, the following *Roses* are suitable for the purpose—viz., *Rampant*, *Donna Maria*, *Triomphe de Bolwyler*, *Madame d'Arblay*, *Garland* (Wood's), *Queen of the Prairies*, and *Baltimore Belle*; to be turned-out of pots at this season. The

above *Roses* are rapid and strong growers, and abundant bloomers.

STOVE.

Make cuttings of any stock that is wanted whilst the propagating-frames are at work, not forgetting the old *Vincas*, the *Thunbergias*, *Plumbagos*, *Justicias*, &c.; these, although old-fashioned, contribute much to the general effect. Pay due attention to watering, shifting, stopping, &c., of stove plants in general. See that growing *Orchids* have abundance of atmospheric moisture, with a circulation of air in the morning, shutting up close betimes, and taking care to observe moderation in the use of fire heat, in order that a pure atmosphere for the night may be insured. Growing *Dendrobiums* will now require liberal supplies of water, and let plants on blocks be frequently syringed.

GREENHOUSE AND CONSERVATORY.

With the increased circulation of air, which the present mild weather will sanction, there will be a more evident necessity for increasing the supply of water to repair the loss which must ensue from a rapid evaporation. During strong solar light the paths of the houses may be damped, which will produce a gentle moisture very grateful to exhausted plants, many of which, having lately been shifted and made some little growth, will suffer from any deficiency of moisture. Proceed with the staking and tying-out of plants requiring such assistance, but if our former directions were carried out relative to growing plants with short-jointed wood, stakes may be generally dispensed with; but some will be necessary to give the plant its desired shape. Turn each plant frequently round that it may not become one-sided. Planted-out things will require thorough waterings. The larger specimens in tubs or pots, if any, to have a liberal supply if the drainage is complete. This is the period for the use of liquid manure, but take care that it is clear and not over-strong. Large *Orange trees* are very fond of it.

PITS AND FRAMES.

These will want, not only daily, but hourly attention. Propagating, pricking-out, potting, hardening-off, with shading, syringing, &c., will be the order of the day for three weeks longer, by which time a thorough supply of stock will be provided for both summer and winter for out-of-doors and in-doors.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

STIRRED the soil among *Cabbages* and *Cauliflowers*, and soused with manure water. Dug, trenched, and turned over vacant ground for *Peas* and late *Carrots*, and main crops of *Beet*, &c., which will be sown about the end of the month. Sowed succession *Turnips*, *Radishes*, &c., and attended to things in general as described in late weeks. Looked over and nipped-in *Cucumber shoots*, and thinned fruit. Sowed rows of Dwarf *Kidney Beans* in front of orchard-house, where *Parsley* stood for the winter. Sowed others in boxes and pots for transplanting under protection. Sowed *Scarlet Runners* also in boxes for transplanting, as they thus fruit rather earlier. Planted out *Broad Beans* from boxes, and sowed others, and scattered burnt earth over seed-beds and young plants, to keep worms and slugs from them. Planted more *Lettuces*, &c.

FRUIT GARDEN.

Regulated *Strawberries*. Planted out a lot of those that had been forced earliest. Pots being an object, they had been turned out close to a north fence, the balls placed close together, and a little rough leaf mould strewn in between them. They are now being planted in a well-dug border, but without breaking the balls at all, the earth being placed firmly against them. From such we generally get good gatherings in September and October, and heavy crops the succeeding year, when the plants are past their best, the second summer's crop being inferior to the first. Being scarce of frames, set lots of plants in the orchard-house to succeed those taken from the forcing-houses and pits. The earliest vinery is now of no use for such a purpose, there being too much shade to permit of flavour to the *Strawberries*. If the plants are brought on a little gradually they do better than when taken from out of doors into a forcing-house at once. Thinned *Grapes*, disbudded *Peaches* in houses, and thinned fruit. In disbudding prefer doing it at different times, instead of leaving only the number of shoots at once, as that in our opinion, though involving less labour, has a tendency to arrest

root-action at a critical time. Used all the thinnings, bruised, put in a tub, and covered with boiling water, to syringe the trees with when the water was cool, poured through a cloth and other water added; so that a bushel of such shoots bruised, and that is easily done, would make about eighteen gallons of cold weak *prussic-acid tea*, which no insects like, and which at that strength most stone fruits like over their foliage, and the houses after the syringing will smell as sweet as a confectioner's shop. Watered Figs, and stopped and regulated shoots, and will soon have to move the Scarlet Geraniums beneath them. Planted out more Melons. Potted Vines in pots, &c. Those who grow Pines must water carefully; and instead of overwatering, it will be best to shade in these very bright days, so apt to be succeeded by dull, cloudy, and wet ones. Extra moisture at the roots is apt to make fruit showing come deformed, and with huge unwieldy crowns.

We notice in page 265, first column, a good plan for getting good *Grapes in a frame*, by Mr. Keane, and we have often been surprised it was not more adopted. When we used to try it we did not make any slit in the boxes to let in the Vines, but merely brought them in through the dung beneath the bottom of the box; and if a lot of roots ran ultimately into the dung from the stem, we did not trouble ourselves in removing them. Also, we generally allowed the stems to lie either close to or only an inch or two from the dung, before they were broken 2 or 3 inches in length, and then by some simple means, as sticks or trellis, they were elevated within 12 or 14 inches of the glass. When the bed was covered with slates or tiles, these were painted with sulphur and lime, if the foliage was at all thick, and with sulphur and a little soot if the foliage was rather thin. The stems not in the box were wrapped round with haybands to prevent sudden extremes of temperature.

We have also seen good *Grapes* against a wall by placing sashes that were to spare against them, something in the Paxtonian fashion, and perhaps the very best were thus managed. The wall was about 7 feet in height, the Vines grown on the long-rod system—that is, the stem that fruited was cut out every year, and a young one grown in summer to take its place. Unless in very severe weather the Vines were exposed all the winter. In the end of February they were pruned, painted with sulphur, and laid down at the foot of the wall, with just a slight sprinkling of straw over them, which kept them from frost, and also tended to make them come later, and induced them to break regularly, which they seldom did until the end of April. They were then fastened to the wall, and the sashes put against them. This also was done in a very simple way. Stout iron brackets stood out a foot from the coping of the wall, and to these were screwed a batten of wood all the way, $2\frac{1}{2}$ inches square. To that batten in turn the tops of the sashes were screwed by two screws in each sash; this left room between the batten-slip and the wall of more than 9 inches, in which a nine-inch board, lying flat, moved easily, and the space being 30 feet in length, two fifteen-foot boards just filled it. There were no hinges or anything of the kind; but a small ladder stood at each end, and the board could be moved to give an inch of air, or set up against the wall to give fully 8 inches, just as was desirable. The bottoms of the sashes rested on a flat rail supported by posts 9 inches from the ground. When the sash was set on the rail, a stout nail in the rail in front of the sash kept it in its place. The loose board did for air in front, but unless in very hot days was seldom used. If the house were shut up at night, a very little air was always given early in the morning, to prevent the heat accumulating too fast, and much of the success we attributed to the comparatively cool temperature at night, and the high temperature, but with air, in hot sunny days. We recollect seeing the thermometer between 90° and 100° , and yet the Vines and Grapes stood it well. The temperature at night would range from 45° to 60° at these times. The one end was covered with stout calico, and a door, also covered with calico, instead of wood, was at the other end. The sashes were used for salads and bedding plants from the end of October to the end of April. The rail for the sashes was $3\frac{1}{2}$ feet from the back wall.

ORNAMENTAL DEPARTMENT.

Rolled lawn preparatory to mowing. Would like to cut *Box-edgings*, but will put the cutting off for a time, fearing we yet may have a frost, as, when fresh cut, Box turns black and looks unsightly for some time afterwards. Dug over beds as opportunity offered, doing this roughly in all cases where planting and sowing were not contemplated. In beds and borders, where planting and sowing were to be done, dug and made fine. In borders, regu-

lated herbaceous plants; planted Heartsease, Pinks, Carnations, &c.; examined Hollyhocks and Phloxes, firming the earth about them, and placing round them some burnt rubbish to keep slugs, &c., at a distance. Ranunculuses, Anemones, &c., should be well firmed round the necks of the plants, and protected from deluges of rain and sharp frosts if they come; and the same may be said of Hyacinths and Tulips. To have fine strong flowers of Ranunculuses, a good plan, after firming the soil round the plants and the ground all over, is just to stir it half an inch deep or so, and then cover the ground with half an inch of fine riddled old cowdung, which will keep the tubers moist and permit of nourishing waterings when rains come or the watering-pot is used. Most of the hardy annuals may now be sowed. In cold soil it will be as well to defer Mignonette until towards the end of the month; but if wanted early out of doors, a lot may be sown in pots to be transplanted, placing these pots under protection. All the half-hardy annuals used for bedding should also now be sown in a slight hotbed; or the bed may be as much as 18 inches deep, with 3 inches of old dung on the top, and as much of fine soil to sow in if you do not have glass to cover with. Stout calico is a capital covering for such a purpose, but it is dear this season. We had a piece not stout the other day, about $1\frac{1}{2}$ yard wide and $10\frac{1}{2}$ d. the yard run, which not so long ago might have been had for 5d. or 6d. per yard run. We trust that calico will yet be more reasonable, and that more for the sake of our Lancashire friends than even gardening purposes, though for the latter it is very useful for makeshift workings at this season, as nothing can equal unbleached coarse calico for hardening-off bedding plants. Another substitute will, no doubt, be obtained when thoroughly demanded. Frigidomo, 2 yards wide and 1s. 6d. per yard run, is a good protection; but it is too thick and dingy for hardening-off bedding plants. Many half-hardy plants will lift in patches from such a bed as the above, hardly feel the moving, and do much better than those sown in pots and coddled in houses.

We must stop, and wish we could stop or find more room for cuttings of bedding Geraniums—among others, Cloth of Gold, which seems to strike very fast; Ageratums, Verbenas, &c., which must be done now wholesale. Have filled all our earth pits with bedding plants, and have nearly filled the old cabbage ground with wide Celery-trenches (5 feet), and these, too, are being filled with Geraniums planted out of boxes or turned out of 60-sized pots, that the pots may be washed and filled again with smaller things, so as to give them a better chance. Planting-out at once is the best for all things that make bunches of fibrous roots. Such plants as Verbenas we plant separately early; but after this season those struck in half-circle drain-tiles are turned out of the tiles, and planted in rich soil just in lumps as they are. By this means no check is given, and when taken up to plant they separate easily, as the fresh roots do not get too far away. This is also a good plan with the Variegated Alyssum if the young plants cannot be kept in pots. If you turn out little plants into a temporary bed as a Celery-trench, they will rise badly, because the roots may wander too far; but when pots of cuttings, or tiles of cuttings, are turned out, and planted in a piece as stated above, the new roots do not wander so far from home, the plants grow freely, and when raised up with a fork in a piece they will plant-out nicely, and scarcely show a flag of distress. If we can spare a frame or two we will make-up a slight hotbed for Verbena-cuttings, cover with 3 inches of rotten dung, 2 inches of rough riddlings of soil, and 2 of finer on the top, with half an inch of drift sand over all, plant the cuttings about 2 inches apart, and in May these would rise with nice balls of rough soil and dung adhering to them. Such methods might not do in a commercial establishment; but something of this kind must be done when the most is to be made of limited means.—R. F.

ERRATUM.—At p. 266, second column, 19th and 30th line from top, the words "pit" and "pits" in the respective lines should be "pot" and "pots."

TO CORRESPONDENTS.

AZALEAS DYING AFTER FLOWERING (J. McN.).—As a precaution, it would be well to be certain that the plants are thoroughly soaked to the centre of the balls, either by placing the pots for half an hour in a tub of water, or making a number of small holes a good depth into the soil with a stout pointed wire, and then watering. The plants should also be kept cool for a week or two after flowering, and be syringed overhead.

DRAWING FLOWER-SEEDS (W. W. H.).—There is no book upon the subject. We hope to begin publishing a series of communications upon geometrical drawings, &c., next week.

APPLE-TREE SHOOTS DISEASED (P. J.).—The roots have descended probably into an ungenial subsoil; and this, combined with the deficient warmth of last summer, has caused the outbreak of canker and the shrivelling in the shoots. If the subsoil is heavy or wet it should be thoroughly drained; but whatever the subsoil may be, we recommend a trench 2 feet deep to be dug on one side of each tree, and then the earth picked away from beneath it, so that all descending roots may be cut through. Then return the earth, and keep the surface slightly manured and mulched in summer to induce the roots to grow nearer the upper stratum of soil. Do not let this be dug, for such digging compels the production of roots lower down.

PRIZE-TAKING GARDENERS (A Young Shoeman).—Never mind what "T. R." or any one else says about gardeners exhibiting, but go on. Everybody writing in favour of his hobby is liable to use strong expressions without intending to offend.

STALKS AND FRUIT OF GREEN GAGES TURNING YELLOW (Amateur).—There is no doubt that the roots have descended into a soil that is ungenial. Serve them as we have recommended another correspondent to serve his Apple trees, but do not do so until the autumn. At present the best treatment will be to remove the soil until you come down to the roots nearest the surface, and cover these with some thoroughly decayed manure, and water with tepid water. Cover the roots thus a distance of 3 feet from the stem all round. The absence of bees will not injure the crop.

BUDS OF APPLE TREES DEFORMED (Mrs. W.).—The information you now send fully accounts for the diseased and decrepit state of the trees. "Sub-soil yellowish gravel; ground has been cropped close up to the very trunks of the trees." The surface roots have consequently been destroyed, the trees compelled to root down into the gravel. The remedy is precisely the same as we have recommended to-day to another correspondent whose Apple trees are affected in a somewhat similar way. You have justly abolished the cropping, and you must now cut away the descended roots and encourage surface roots. The deformed shoots we should prune away by degrees.

FLOWER-GARDEN PLAN (Sarah).—If Tom, Jack, or Harry had sent us such a plan, we should have been tempted to engage it, just to show what an amount of labour and worry some people would take to make a lot of all sorts of figures in a flower garden, some of them hideous enough, and having no possible connection or balancing with each other. There is scarcely a figure in the two large groups but might be surpassed by another still more ugly, and that without disarranging in the least the general effect as a whole. As it is "SARAH" who asks our advice, why we can only remind her that disjointed variety is fatal to beauty, and that the planting intended will be far superior to the forms of the clumps, and the effect will be far better than the colouring with which she has kindly given us an idea of what the appearance will be. We would recommend her to carry out the proposed planing this year, with such little modifications as may be suggested; and next year, after reading all the notes on flower gardens, cut up her large flower garden into several distinct groups, so as to give to the whole more light and shade, as well as distinct features. At present there are two groups, one on each side of a walk to the greenhouse, which, with the exception of the centres, seem to have little similarity or balancing with each other, and yet our correspondent "SARAH" has fair ideas of grouping and balancing. Thus on the left-hand side there is a centre of a large figure that might be considered a star with large rounded points, and that is to be filled with mixed Verbenas, which scarcely any planting can make look ill. Then round that there are three circles and three large oblong beds alternately, which also will, no doubt, look well. The three oblongs, all varying in form, but near enough to ovals with blunt rounded ends to suit our purpose, are thus planted:—The side next the Verbenas blue Lobelia, the centre Christine Geranium, the other side Lady Plymouth, white variegated-leaved Geranium. The colours of the bed put down are blue on one side, pink in the middle, and white on the other side. A good friend told us the other day that really we must put a bridle on our fancy—the illustration of the pony chaise in the sketch of Straffan was really outrageous. Well, let him and "SARAH" settle it between them. There, as anybody may see, is the pink body of the pony chaise with one wheel charmingly blue and the other wheel as delicately white. With this exception the balancing system is pretty well maintained, 10 and 12, 9 and 13 doing well as counterparts, though, from the large size of these and the remaining beds, they would have done well for broad edgings. We also think 14 should balance with 8. On the right side of the walk the centre and the six beds round it are the same as on the left side; but here balancing ends and the beds opposite each other on the two sides of the walk come in as contrast rather than in uniformity, as Trentham Rose and Heliotrope, Manglessi Geranium and Purple King Verbenas, &c. We find no fault with this: it is just the question of the pair of horses—matched or dissimilar? We do not know the size of the beds, but we judge they must be rather large, and therefore such as would be improved by edgings, and pretty broad ones. On the whole, though convinced that "SARAH's" labours are greatly increased by the form and arrangement of her beds, we have no doubt the effect of her planting will be far superior to the colouring on paper.

SEEDLING CINEARIA (A. K.).—Showy, but nothing more, so far as we can determine from two withering pips. The truss and habit of the plant have to be considered.

DENDROBIUM NOBILE (A Subscriber).—Too much dryness at the roots and a moist warm atmosphere are apt to make this Dendrobe break, as you describe, "freely along the bulbs, but not from the bottom." If you dislike the appearance, you had better take the pieces off and form with each a fresh plant. For Mignonette Trees, see article in another page.

BURNT EARTH FOR VINE-BORDERS (Q. Q.).—The rougher part of the burnt earth would answer well for the Vine-border. A few bones in addition would be advisable, as the burnt earth will act chiefly in a mechanical manner for keeping the soil open.

PLANTS BETWEEN ROWS OF GLADIOLI (Idem).—Why should you have plants between rows of Gladioli at all? The Orach will answer as well as any other, and by pruning and nipping you may have it just any height you please, from 6 inches to 6 feet.

GOLDEN CHAIN GERANIUM (Idem).—The yellow edge of Golden Chain varies much according to exposure and growth. It is generally nearer three quarters of an inch than one-eighth of an inch, but frequently there is less green than yellow. There is no accounting for such things. With us Brilliant Geranium flowers nicely; but we never have so much white at the edges as many of our neighbours.

CAMELLIA EXIMIA (A Subscriber).—A double-centred Camellia flower is not of usual occurrence, but we have seen two or three similar instances. They occurred, as yours seems to have occurred, on a robust well-grown plant.

FLOWER-GARDEN PLAN (Diffidence).—We will publish a drawing of your plan next week, with a few notes.

VINES THE SEASON AFTER PLANTING (J. C., Halifax).—If not experienced you would have acted wisely to have let your Vines break naturally, merely keeping frost from them, giving them a lift with a little fire heat in dull cold weather in summer, and ripening the wood early by a little dry heat in autumn. We know of no fruit tree so suitable for training under the ridge of a cool greenhouse as a Vine. If you fancied such a fruit, however, the Passiflora edulis would do very well, and would fruit in the second or third year. The fruit is purplish-coloured, and about the size of a hen's egg. Some people are very fond of the fruit, as it is very peculiar in flavour and luscious. We think Hentfrey's "Rudiments of Botany" would suit you to commence studying.

VINES FROM EYES AND FROM LAYERS (W. M.).—We know of no superiority possessed by Vines raised from eyes in comparison with those raised from layers. They are usually raised from eyes or from cuttings, because more can be so raised from the shoots pruned off, and because it is not often that layering is convenient.

PORTABLE MANURES (J. Picard).—As a general manure guano will suit you. Rake your mossy lawn, and give it a dressing with finely-sifted coal ashes and a little cubic petre. For a kitchen garden you will require more than one package, and had better send a post-office order. A manual will shortly be published at our office, entitled "Manures for the Many," which will give instructions for their application.

TROPEOLIUM SEEDLINGS (T. C., Yorkshire).—Both are too ragged to be of much use while there are so many good forms of the Lobbianum breed. No. 1 is pretty, and from your description of its habit may look very well in a bed; but of that, of course, we cannot judge.

TOM THUMB GERANIUM LEAVES TURNING WHITE (A. R.).—We fear your plants receive too much water, or are in the shade too much. Many of the Tom Thumb breed of Scarlet Geranium become blanched-looking in the foliage in winter, but recover as the spring advances, and we hope yours will do so also. Keep your plants more dry, and if they have been in the shade remove them gradually to the light; and if you keep the place a little warmer it would be better. We fully expect shade and moisture are at the bottom of the evil, and that a contrary course will remove it.

TWENTY HARDY ANNUALS (A Subscriber).—The following will succeed well in most places if sown on an open border:—Clarkia pulchella, Erysimum Peroffskianum, Iberis grandiflora, some Larkspurs, Leptosiphon densiflorum, Schizanthus pinnatus, Viscaria oculata, Saponaria calabrica, Calliopis (may be late), Collinsia bicolor (good and hardy), Nemophila insignis, Convolvulus minor, Stocks of Ten-week breed, Marigolds of the orange or old English class, purple Jacobaea, some Lupinauses, and Enocheras or Godetias; and if the soil and season be favourable Asters and Chrysanthemums do pretty well sown in the open border. To these we may add Sweet Peas, Mignonette, and Nasturtium, all useful annuals in their way.

NAMES OF PLANTS (Quercus).—1, Rhamnus alaternus; 2, Amelanchier botryapium; 3, Ruscus aculeatus; 4, some Cypress, not to be recognised from a scrap. (An Old Lover of Flowers).—Your "Australian Lilac" is Hardenbergia monophylla, formerly Kennedy, and in an early volume of the "Botanical Magazine" is drawn and named Glycine bimaculata. (A Subscriber).—The flowers of Rhododendron Maddenii are white. The leaves you enclosed look like those of R. arboreum. (A. R. C.).—Habenaria elegans. (H. H. W.).—1, Pilea serpyllifolia; 2, Onoclea sensibilis, a hardy, not a stove Fern; 3, Woodwardia, or Doodia media.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE POULTRY CLUB.

To make a good donkey race every competitor should ride his neighbour's donkey; and if the proposed rules for judging are carried out, we would suggest that every man's pen shall be judged by one of his opponents. Eye is no longer required; gift is all moonshine; practice is nothing. There are the rules, and a first-prize pen must possess the qualifications that are put down. No. 6 condemns No. 5 in Hamburgs because the tail is not pencilled, and No. 5 condemns 6 because the hackle is spotted. No. 3 condemns 4 because there is a loose comb, and No. 4 condemns 3 because the pike is down instead of up. This is not so ridiculous as it may seem. Rules are to do away with discretionary power and awards, which form the groundwork of all complaint, and to inaugurate the golden age by informing exhibitors what they must breed, and by what rules they will be judged.

There will be something quite touching in the resignation with which a whole class of exhibitors will submit to be told that none of their pens are perfect or come up to the standard as settled by the Club. It may be that one ill-conditioned person will ask to have the money returned, as no prizes are awarded; but, of course, an appeal to his better feelings will cause him to admit the injustice of his conduct. How beautiful the spectacle will be of a score of disqualified exhibitors all perfectly satisfied, studying the points, admitting their shortcomings, and wondering at the folly that permitted them in past times to take prizes they did not deserve!

What a good example will be set by the President, Secretaries, and Council if they give the cups they have gained to decorate

the club-room, and to show their sincerity. Judges and exhibitors will be all agreed; the latter will not wait to have faults pointed out—they will proclaim them. When things are properly understood, and the rules are properly digested, it will not be difficult to find exhibitors who will judge their own classes. Fancy, at a small exhibition, one of those little Poland or White Cochins where there are three competitors. The three walk gently up to the class, together they examine each other's pens, there is a short reference to the book; conviction steals over them, and the senior shakes his head, while he says, "Brothers, brothers, we are all wrong." The advantage will be immense; no erratic judgments; no possibility of crotchety arbitrators; no generalities to shield ignorant or knavish awards; all fair sailing according to the book. Then, after a time, knowledge will be diffused; since all that is necessary can be learned from a book, all will be alike well informed, and the exhibitor with the Judge will stand in the position of the 'coon with the Curnel. "Don't shoot, Curnel, I will come down." You need not judge, I will give in. I see I am beaten.—CHITO.

BATH AND WEST OF ENGLAND POULTRY EXHIBITION.

YOUR correspondent "J." in his remarks upon the above Society's regulations as to poultry, forgets the fact that the poultry department is but one of many, and that in the general arrangements of the Exhibition of the Bath and West of England Agricultural Society a necessity exists (under the recent decision of the Council to open five days to the public), for an earlier arrival of the birds than when the Show extended only over three days.

I quite agree with him in thinking it desirable to shorten the period of confinement as much as possible. With this view I have obtained the sanction of the Council to admit specimens as late as Saturday evening, the 6th of June, instead of Friday morning. To accomplish this we shall adopt the system of open judging on Monday, as will be the case in all the other departments. Exhibitors who like to see their own birds judged will have the opportunity of witnessing the duties as discharged by our Judges. I trust, as the system has succeeded so well at Battersea Park and Hereford, it may also in poultry at Exeter. At all events owners will see that their birds are not passed over, and that judges do take trouble to inspect and decide to the best of their ability.

As to the complaint of another correspondent, that many classes are omitted, I can only remark that we have, after ten years' experience, come to the conclusion that it is better to give good prizes to all the leading classes rather than to divide into more numerous and give small rewards to all. Large as £160 seem to our Council—and it is the largest sum given by any agricultural society in either England or Scotland—when divided into smaller sums for the various classes, it is truly not sufficient to bring all to our yard. The Stewards, therefore, determined, whether wisely or not the general public must judge, to leave what I may call the more exceptional classes, most deserving of all support and honour, to the Crystal Palace and Birmingham Shows, that have larger funds to deal with; and to stimulate exhibitors to send us as good an exhibition as possible of classes more generally kept throughout the kingdom.

We have striven in vain for some years past to induce exhibitors to send many of the classes mentioned by your correspondent. I thank him still most heartily for his remarks, and have to the best of my ability done what I could to promote an interest in poultry exhibitions. If he could have sat at the Council Board with me for the last ten years, he would have felt that it is a task of no common labour to induce an agricultural body to give the support which the Bath and West of England Society has to the poultry department. When the Royal Agricultural Society abandoned their exhibitions, their evil example might have been followed; but such, I am proud to say, has not been the case—upwards of £1500 has been distributed during the past ten years.—S. PITMAN, *one of the Stewards of the Poultry Department.*

MALAY FOWLS.

WHEN your correspondent the Dotter at Devizes first made his remark, "Some Malays were there conspicuous by their ugliness," I must confess to a most overwhelming warlike feeling of opposition to one who could thus designate my favourite

breed of fowls; but a little patience, and here comes the good in place of the imaginary evil. Up springs friend Fox, and starts a fine course of inquiry and reply, and consequent information; so that our hitherto-almost-isolated pets are really now making a grand show in the columns of the "Poultry Chronicle," and assuming their true position—viz., important members of the aristocracy of poultry.

In reply to the spirited letter of Mr. J. J. Fox, you give us "your notion of what a Malay should be;" and I feel bound to say that it is the best description I have ever known given—at any rate, it is in strict conformity with my own ideas; and, therefore, it is not surprising that I should dub it *AL*.

Friend Fox says that when doctors differ patients suffer; but differ they will for all that, and Mr. Ballance is not the only one who differs on this subject. In 1860 a Poultry Diary was published, to which was appended, "The proposed basis for uniformity of judgment at exhibitions of poultry, submitted by the Amateur Poultry Society of Dublin," and amongst the rest was the Malay described thus:—*HEAD*, *beak* horn colour; *eyes*, orange red, sunken beneath a projecting brow (we like pearled eyes); *comb*, low and indented; *wattles*, very small, more properly folds of the skin of the throat than wattles; *ear-lobe*, rudimentary; *face*, brilliant crimson; *neck*, orange red; *back*, maroon; *wing*, shoulder maroon, steel-blue bar across; *flight-feathers*, bay; *breast*, black with irregular bay markings; *tail*, scanty, drooping; *legs*, olive brown.

By comparing this with "your notion" and Mr. Ballance's letter, we find that our Hibernian friends differ with us on various points, and are not set on yellow legs. Some of the best birds I ever had or saw had pale olive or willow legs. My present stock have yellows. I should not mind if they were olive. I certainly should prefer pale olive or willow to white.

I cannot agree that legs of any other colour than yellow could not be shown in a Malay class. I have seen pale willows take a Birmingham first prize.

I also feel assured that a true Malay, however fine in feather, ought to have the "red jacket" bare and exposed fore and aft, as mentioned in your "notion," and I really think that of late years more than one exhibitor has tried to breed for more feather than the Malay fowl should have, because other persons who have not perfectly understood the breed have looked upon this real and essential property in a wrong light, and have given encouragement to the more full-feathered specimens.

Mr. Ballance fears that some judges have lost sight of "perfection of plumage, and have awarded prizes to birds of good blood though wretched in feather." I say with Mr. Fox, "I never did and I never wish to dispute the decisions of Judges;" but I really do venture to think that when mistakes have been made, it has more often been in favour of the over-feathered sort than their more scanty and close-cut brethren; and I quite agree with you that there are but few judges of Malays in England.

I cannot exactly understand your correspondent the Dotter at Devizes. First he says they were conspicuous for their ugliness; secondly, he admired Mr. Fox's as much as any; thirdly, some young birds provoked him because they had not the brighter colours of adults; and fourthly, Mr. Fox's birds were too handsome. But, never mind, he winds up with a warm eulogium on the characteristic of the Malay, "especially the featherless strains;" and glowingly describes his peculiar defiant air, and how cool the bold fellow takes any endeavours to intimidate or ruffle him, a compliment none the less sweet because well merited. For this I, as the friend of Malays, sincerely thank him, and beg to assure him that all the overwhelming warlike feelings are "abandoned, buried in oblivion," &c.—JOHN RUMERY.

P.S.—When the Poultry Club have a wish for subscribers, it is to be supposed they will advertise where circulars, &c., are to be obtained.

TOMTIT AND HIS ASSOCIATES.

Of the Tit tribe there are seven species natives of these islands, which may be briefly enumerated as follows:—

First, the Great Tit or Tomtit, known also by the names of Ox-eye, Joe Ben, Chinker Chinker, and Billy Biter. He has a very dark bluish-black head, whitish cheeks, yellowish breast with a black stripe running down the throat, and the upper parts of the body are bluish-grey.

The second is the little Blue Tit, known also by the appellations of Billy Blue, Blue Cap, Titmouse, or Nan. This species is much smaller than the before-mentioned: it is devoid

of the black on the head and throat, but has some fine azure blue on the head, the general plumage being of a dingy blue colour.

Third, the Coletit. This bird is about the size of the preceding, but is not nearly so blue in plumage, being more of a brownish-grey. The head is black. There is some white about the cheeks, and a whitish mark divides the black at the back of the head, and by which it may be readily distinguished from,

Fourth, the Marsh Tit. This bird is intermediate in size between the first and the others; it is slighter made. The head is all black, the general colour being brownish-grey, so that it bears considerable resemblance to the Black Cap Warbler; and it is not improbable that this likeness may have caused this bird to be blamed for the other's fruit-eating.

The fifth is the Long-tailed Titmouse, sometimes also called Bottle Tit, on account of the form of the nest which it builds. It is the smallest of our Tits, pied black and white, with a very long tail in proportion to its size. They are very active little birds, and usually live in small communities through the winter, the few that survive pairing-off in spring.

The two remaining species of Tits—namely, the Bearded Tit and the Crested Tit—are very local birds, nor do I think they are sufficiently common to require the gardener's notice; and, as I have not seen them alive, I can give no account of their habits.

Of the five species previously enumerated, their habits are so much alike that one description will serve for all.

I am well aware that with many fruit-growers and gardeners there is a strong prejudice against the whole fraternity of Tits; and I must therefore be somewhat particular in describing their habits. Let us suppose a pair to have eked out the scanty fare of the cold winter months, when they had to subsist principally on the insects which they could pick out from their retreats, among the moss, in the cracks of the bark of trees, or in the chinks and holes in walls and such-like places, by picking up a few stray crumbs or bits of fat, overhauling the horse-droppings on the road, or even by a sly visit to the butcher's premises, in order to pick a little suet. Having thus escaped starvation the pair betake themselves to an orchard, and here they set diligently to work to pick off the eggs of moths that have been laid in rings round the twigs, and which are ready to hatch as soon as the leaves are forward enough to provide the young caterpillars with subsistence. There is also a weevil that lays its eggs at the base of the buds or among the scales, and the Tits are busily engaged hunting the young larva as soon as it commences eating the bud; it is now that the ire of the gardener is first raised against the industrious Tits for pecking the buds, though their doing so is only to feed on the destroyers that have been overlooked by man, but not lost sight of by the birds, and which if not killed at this time would do irretrievable injury to that crop of fruit, besides becoming the progenitors of devastating thousands in years to come.

The buds in spring being fairly opened, the yet tender green leaves are preyed on by all those caterpillars hatched from the eggs overlooked by the Tits, and these now form their chief food; of which also the Sparrow, Chaffinch, and several other birds partake largely, particularly during the time they are rearing their young ones. As summer advances the old ones, followed by their merry troop of young, fly from tree to tree picking-out all they can find that have now spun their cocoons or laid themselves up for the chrysalis state; they search, too, for those caterpillars that wind themselves up in the leaves, small beetles, weevils, earwigs, and other insects, either in the egg, grub, pupa, or perfect state. Whenever they can find them they eat them up, and thus prevent their doing any further injury, giving them no chance of bringing forth a numerous progeny, which they assuredly would do if left unmolested. There is scarcely a tree but has some insect that preys on its leaves, fruit, or even the wood. Is it a weevil that deposits its egg in the young nut while the shell is soft? Tomtit is there to pick out the egg, to catch the old insect, or, when the nut having grown, the maggot grown too by feeding on the kernel, and boring for himself a way out that he may transform in the ground, Tomtit is there to look for him; but, being in such suspicious proximity, he is often accused of doing that which he has tried his best to prevent. There are other insects that deposit their eggs in the young Plums, Pears, and Apples. All fruit-eaters must be well acquainted with the excavations and borings of these depredators, and Master Thomas Tit is very fond of their plump and well-fed carcasses; yet, when he attempts

to enlarge the hole to fetch them out, and thus prevent their ever being the parents of another generation, the hue-and-cry is raised, "The Tomtit is pecking my best fruit!" It is a pity he cannot change his name, for at present he has such a bad one that few will believe any good of him, and all manner of damage is laid to his charge, of which, as generally happens, if properly looked into he would be found innocent.

But time flies, and I am already taking too much space. As the nights become chilly and insects are less plentiful, he will come to the garden for Sunflower and Poppy seeds, and during the cold of winter he will exhibit his predilection for insect food even under difficulties, by tapping at the entrance of the bee-hives and picking up the bee that ventures to answer his summons. But are the Tits all to be persecuted for doing this that may be easily prevented? A little piece of netting stretched in front of the hives will keep him at a proper distance; while gathering the seed when ripe will prevent his appropriating them to his own use. As to his bud-pecking and fruit-eating, it is far too insignificant in comparison to the immense good this tribe of birds do, could it be but viewed in its true light, and without prejudice; for, if these bud and fruit-destroying insects were not killed by the birds, how much fruit might we expect to ripen? I fear the quantity is now much less than it might be.—B. P. BRENT.

WHICH OWL DESTROYS GAME?

YOUR correspondent's excellent remarks upon the various insectivorous "Garden Helps" in last week's Journal, contain opinions as to the propensities of the owl which I think will be found to be erroneous.

He considers that none of our owls are destroyers of game. Now, I have heard of the debris of game of all kinds—hares, partridges, &c., being found in immense quantities in the haunts and nests of at least one of our owls. I am not naturalist enough to remember which, but I think it is the brown owl.

If you would insert this, no doubt it would meet the eye of many a correspondent who is in a position to give some interesting information on the subject.—W. H. BEADON.

MEETING OF GERMAN BEE-KEEPERS AT POTSDAM.

(Continued from page 197.)

THE next subject taken into consideration was:—

III. *Of what practical value is a drone-breeding queen in spring?*

Herr Vogel, by whom this question was proposed, introduced it by stating that a drone-breeding queen produced early in spring drones to impregnate any young queens which may then exist, keeps the bees at work, and when added to an artificial swarm, the bees are satisfied, and may even be placed beside normal stocks without returning to their old hive, and her presence encourages them to defend themselves from robbers.

Herr Weitzel on the other hand declared that such a queen has for the rational bee-keeper no value whatever (cheers).

Herr Hubler advised, amidst general cheering, that any one who had a drone-breeding queen should take her between his fingers and mercilessly crush her head.

IV. *Why are artificial swarms to be preferred to natural swarms, and how may the remaining royal cells be certainly and safely used in the same apiary?*

Pfarrer Dzierzon said, "This question presupposed that artificial swarms are, without exception, to be preferred to natural swarms. This, however, I should not assert. One may often do just as well with natural swarms. Artificial increase by means of driving is preferable when natural swarms do not issue in good time, especially in countries with an early pasture, which, however, lasts but a little while; for natural swarms, perhaps, might not issue till about the end of the honey-harvest, and then both young and old must meet the winter destitute of honey. Where, however, the bee-pasturage lasts as late as September—where even swarms which issued in August may still become good stocks, and where also, as is generally the case in such countries, the pasturage lasts a long time, sufficient (perhaps more than one wishes) swarms issue naturally—there would driving be superfluous, and no man of sense will endeavour to attain by artifice what nature gives voluntarily in sufficient quantity."

Pastor Kleine said, "I do not claim any particular advantage for artificial over natural swarms, nor will I allow that artificial swarms are in any respect inferior to natural ones. All depends upon setting to work in a sensible manner—on going hand in hand with nature so as to make artificial equal to natural swarms, and even to secure to them important advantages. It cannot be denied that in bee-keeping, according to Dzierzon, they have obtained a degree of certainty which obviates failure. In respect to the second part of the question, I may be allowed to communicate my mode of procedure which enables me safely to use all royal cells in one and the same apiary. About eight or ten days before I begin to make artificial swarms, I choose one or several stocks to rear young queens. According to the number of begun and disposable queen-cells, I make artificial swarms, inserting brood-combs and giving to every swarm a sealed royal cell, so that it may come into possession of a young queen with as little loss of time as possible. However, I always insert the queen-cell where the bees naturally make their chief seat—thus, at the top or middle of a brood-comb in order that the nymph may not lack the warmth necessary for hatching, even if the bees should not collect themselves about it. Thus it very seldom happens that one of the inserted royal cells fails to hatch. But in order also to provide against this contingency, I always leave in the queen-rearing stocks a few superfluous royal cells, especially those which have been made on the surface of the combs, and the cutting-out of which, moreover, would damage the comb. In order, however, that the young queens confined in them may not be torn out, I protect the sealed cell by means of a very simple apparatus, by a queen-cage, which by its simplicity and practical usefulness distinguishes itself as much from the trap of the heath bee-keepers, as from the Dzierzon queen-cage and the various imitations of it. This queen-cage is nothing but a tobacco-pipe cover made of wire, such as is frequently used by smokers, and which one may buy for a few pence at every wire-worker's. Such a cover I put over the queen-cell and press it into the comb as far as the partition-wall, so that the bees may not be able to gnaw through under the edge of the cover and destroy the cell. If I have also some cells which have been made at the edges of the combs, and which on account of their position cannot well be protected in the above way, I cut them out, fasten them separately in flat-pressed pipe-covers, which I close from the access of the bees with thin pieces of wood, and hang each cell near the top between two combs. All royal cells treated in this way generally hatch, and it is easy thus to arrange a regular breeding-cage, as four or five cells may be conveniently inserted in one passage."

Count Stosch said the honour of introducing the tobacco-pipe cover belonged to Dr. Donhoff.

Herr Weitzel said, "In Württemberg we have had experience and are convinced that artificial swarms are in all cases to be preferred to natural ones. In a country where natural swarms issue freely and in good time, it is of course superfluous to make them artificially." He then described his mode of making artificial swarms, which differs little from that already described in these columns by—A DEVONSHIRE BEE-KEEPER.

(To be continued.)

THE DISTANCE BEES FLY.

In Vols. VII. and VIII. of *THE COTTAGE GARDENER* you will find some observation on this head—it depends much upon the season. In the month of June, when the fields are covered with flowers, I do not think that the flight of bees exceeds from 800 to 1200 yards. Then, again, bees will take long flights when the lime trees are in full blossom; these blossoms seem immense favourites with them, for the bees will dash through heavy showers in an unusually fearless manner, and to the distance of a mile and a half, to wallow in the fragrance, and there is certainly a way with these insects of communicating intelligence to each other where bee pasture is to be found.

In your *JOURNAL OF HORTICULTURE* mention was made that hive bees were frequently seen on the Bass Rock, in the county of Haddington (East Lothian), between Dunbar and Haddington. I have visited the Bass Rock, which is three English miles from the main land, and I enjoyed a pleasant day's shooting at the Gannets, or Solan geese. No bees are kept on that beautiful and romantic little rocky island.

Bees will also fly a great distance late in the summer to find heath or white clover (*Trifolium repens*), but they are more

excited and busy when that sweet exudation called "honey-dew" is plentiful. This happens only about every third or fourth summer on an average of twenty years.

No doubt, as stated, much depends on the quantity of bee pasture, and the nearness to the favourite flowers, and the fineness of the weather; but where a great variety of bee flowers are to be found, from the end of May to the first week in July, the flight of bees is not above half the distance it is at other times.—H. W. NEWMAN.

BEE-FEEDING.

As a cannie Scotchman, I wish to say a few words to your correspondent "B. I. S." upon feeding. I had thought that we as a nation were the only party that had become addicted to the use of the bottle; but it appears that there are some apiarists across the Tweed becoming addicted to the use of it also. For this I am sorry; and as a bee-keeper of some years' experience I would suggest to "B. I. S." the propriety of his not adopting the bottle, as was done by our grandfathers, who threw it aside years ago. Let "B. I. S." adopt the system of feeding below, as approved of by your correspondent "UPWARDS AND ONWARDS," giving from 2 to 3 ozs. of syrup every night in tins shaped like razor-strops. Remove in the morning. Weigh once a-week, and see that the weight increases. Add a little extra covering as long as the nights are cold; and should he have a fertile queen, we will warrant plenty of bees to take advantage of the white clover when it comes in bloom.

By adopting the above plan "B. I. S." will also find that he will manage to feed six hives in the time that he would take to feed one with the bottle, and run no risk of chilling the brood. Let those who advocate the bottle try this plan of spring-feeding, and I am convinced that they will throw the bottle from them as being unworthy the advocacy it has received.—AN AYRSHIRE BEE-KEEPER.

OUR LETTER BOX.

PRESERVING EGGS (L. T. B.).—Dipping the eggs in melted fat and storing them in a dry cold place will preserve eggs as long as any mode of treatment. We have known them thus keep good from May until Christmas.

YARD FOR FOWLS (T. P. Ramsden).—You may keep a cock and six hens in your enclosed yard. As it is gravelled have a shed at one end with 6 or more inches in depth of sand on the surface for them to bask in; and a heap of limy rubbish for the hens to obtain material for their egg-shells. Supply them with as much green food as you can, such as grass-mowings and lettuce leaves. You will have an enclosed roosting and nest-house of course. Buff or Partridge Cochins, or Brahma Pouter pullets, will supply you best with eggs in winter.

EGGS NOT HATCHING (C. H. H. D. A.).—The eggs in question are clear eggs—i.e. they are not impregnated in any way. They have no germ of life in them, and consequently, if a hen were to sit on them for a year no change would take place. That which has never lived cannot die. The clear eggs if covered with butter, or put in lime when laid, will retain all the delicacy of a new-laid egg for months. That which spoils a good egg and renders it rotten is, that a hen should sit for three or four days till life has begun, then desert for some hours, causing death, then sitting again closely, the heat that would have brought the life to maturity merely putrefies the dead chicken. Boiled rice is better than raw, and if boiled in milk so much the better. It is very well as a change now and then, but as food it is poor stuff. For animals, as for human beings in our climate, it is only fit to be an auxiliary.

BEES (E. Fairbrother).—There is no particular management required for obtaining fertile queens. You will have seen what Mr. Newman says about the distant flight of bees. There are very few flowers from which they do not gather honey; but clovers, heaths, lime trees, beans, &c., &c., are wholesale pasturage for them. You have seen the drawings of Mr. Woodbury's hives, and you must consult a carpenter how best to alter your Taylor's hives.

DAY'S GAME PASTE (Hamburg).—You had better try it. It is said to prevent, as well as cure, both "gapes" and "roup." It certainly has testimonials in its favour from several gentlemen in various parts of England.

LONDON MARKETS.—APRIL 13.

POULTRY.

Good young poultry is getting scarce. The mild weather has caused much that would have remained tender to become hard. The winter stock is exhausted, the spring stock is not ready. Prices have advanced in some instances; and, but for the lack of trade and demand, poultry would be very dear.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	6	to	4	Guinea Fowl	0	0	to	3
Smaller do.	2	6	to	3	Hares	0	0	to	0
Chickens	2	6	to	3	Rabbits	1	4	to	1
Goslings	6	0	to	6	Wild do.	0	8	to	0
Duckings	3	6	to	4	Pigeons	0	8	to	0

WEEKLY CALENDAR.

Day of Mnth	Day of Week.	APRIL 21—27, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock after Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
21	Tu	Sun's declin. 11° 47' N.	29.950—29.948	degrees.			m. h.	m. h.	m. h.		m. s.	
22	W	Alder Buckthorn flowers,	29.731—29.543	64—37	S.W.	—	54 af 4	3 af 7	57 10	3	1 17	111
23	Th	Gooseberry flowers.	29.854—29.628	60—42	S.W.	.11	52 4	5 7	44 11	4	1 29	112
24	F	R. P. Knight died, 1824. G.	29.854—29.628	61—39	S.W.	.01	50 4	6 7	morn.	5	1 41	113
25	S	St. MARK. PRINCESS ALICE born	29.995—29.864	69—37	S.	.05	48 4	8 7	23 0	6	1 53	114
26	SUN	3 SUNDAY AFTER EASTER. [1843.	29.862—29.834	76—43	S.W.	.12	46 4	10 7	56 0	7	2 4	115
27	M	Wild Tulip flowers.	29.871—29.846	67—35	S.W.	.04	44 4	11 7	22 1	8	2 14	116
			30.026—30.015	70—31	W.	—	42 4	13 7	46 1	9	2 24	117

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 58.2° and 36.6° respectively. The greatest heat, 80°, occurred on the 25th, in 1840; and the lowest cold, 18°, on the 24th, in 1854. During the period 139 days were fine, and on 113 rain fell.

FERTILISATION OF ORCHIDS.



ILLINGLY, according to Mr. Darwin's request, I forwarded him a few seeds of the abortive *Cattleya crispa* flower referred to, and also a few seeds from a capsule that set spontaneously on *Lælia cinnabarina*, with the view of instituting a

comparison upon the reproductive tendency of a perfect and an imperfectly developed flower. The results of his analysis will, in all probability, be already in your hands.

I also sent by the same post a few of each of the above seeds to Mr. Gosse, who, after a careful microscopic examination, embodies the results of his views and experiments in a form which cannot fail to be generally interesting.

I may state, in addition to what I have already said, that the more I examine the positions of the organs of reproduction in Orchids, the more I am astonished at their power of producing seed-capsules without insect or other agency. At all events, it seems inconceivable why the pollinium of a perfectly enveloped flower should find its way to the stigmatic surface so as to produce even 2 per cent. of fertile seeds.

Mr. Darwin speaking of Dr. Cruger and Mr. Scott having observed the emission of pollen-tubes from the pollen-masses, brings to my recollection seeing the long, white, stringy, elastic tubes, which have, in several instances, been faintly discernible to the naked eye when the pollen-masses were irritated with the sharp point of a pencil. All those who have tried their hand at Sikkim *Rhododendron* crossing will have observed the same stringy masses, although on a much larger scale, by irritating any of the stamens. There is, therefore, not much anomaly in a perfect flower producing fruit with little or no artificial agency; although I am strongly of opinion, after a series of trials, that the germinating power of these pods that have had, so to speak, a spontaneous existence, is exceedingly weak.

It appears to me that bees are not such useful agents as moths, especially in the hot climate of our Orchid-houses, for probing the orifices of this wonderful and beautifully constituted genus; for although we have occasionally seen bees in the interior of the houses, we were never sensible of their making an attempt to seek nectar from the flowers, as they seemed quite uneasy at their close confinement. There is a species of insect, however, which is one of the worst pests to be found in an Orchid-house, that is admirably suited, with its long proboscis, for all the requisites of promoting fertilisation; and it may be, for anything I know, an agent in this

capacity. The insect I refer to is also exotic—a species of cockroach bearing the name of *Blatta orientalis*. They delight to feed upon the young roots and flower-shoots of all epiphytal Orchids, and require to be hunted down, else they would make such raids upon these valuable plants as to seriously deteriorate their value. Their time of working is at night; and although I have killed dozens of them upon the flowers, I have no mode in candlelight of discovering whether they ever detached the pollinia. In fact, we have all along only been too anxious to deal summarily with them.

Four out of the seven great divisions of Orchidaceæ comprise the greater number of plants cultivated for their ornamental appearance in our plant-houses; and out of these four the *Vandæ* form by far the most important division. It is a curious fact, if we except all those under the *Brassidæ* subdivision, not a single one of them, but the comparatively recent introduction *Sarcanthus Parishii*, has offered to set a seed-capsule. Of course, since I set about cross-breeding I have induced several to do so; but before I ever tried anything of the sort, none of the *Vandas*, *Ærides*, *Phalænopses*, *Saccolabiums*, *Maxillarias*, *Zygopetalums*, &c., made what I have, rightly or wrongly, called a spontaneous effort. The *Epidendræ*, on the contrary, have been conspicuous in seed-setting; and I only mention the fact for such scientific men as Mr. Darwin to ponder over and explain. *Cattleyas* often produce seed-pods, and occasionally *Lælias*, *Chysis*, *Epidendrums*, *Phaius*, *Schomburgkias*. We had a plant of *S. crispa* imported from Trinidad among some other things. It is the least ornamental of all the tribe, producing ten or twelve dingy-coloured wavy-edged flowers on the top of a stem about 5 feet long. These flowers only remained expanded about a day, or at most two days, and every one of them produced a seed-capsule, which goes a certain way to corroborate Dr. Cruger's observations.

Dendrobiums are the only representatives in the *Malaxæ* division that have formed pods spontaneously. In the *Cypripediæ* I have only in my experience had one attempt at seeding, and that was the rare and beautiful *superbiens* vel *Veitchii*; but it was a feeble attempt, ripening-off prematurely, which was never the case with me in any other species.—JAS. ANDERSON, *Meadow Bank, Uddingstone, N.B.*

MICROSCOPIC OBSERVATIONS ON SOME SEEDS OF ORCHIDS.

The following observations may possess some points of interest for the readers of THE JOURNAL OF HORTICULTURE. They were made on samples of seed sent to me by Mr. James Anderson—viz., that of a *Lælia cinnabarina*, which had set spontaneously from a perfect flower; and that from the pod which was produced by an abortive flower of *Cattleya crispa*, referred to in his communication, JOURNAL OF HORTICULTURE, p. 207. I have added some notes on seed of another *Cattleya*. The observations were all made with a power of 300 diameters.

LÆLIA CINNABARINA.—About 20 per cent. of the whole contain an embryo; the remainder consist of the empty

seed-coat. The former may be distinguished under the microscope by being much more plump, and by the central portion being of a pale olive hue, but quite pellucid. This colour marks the embryo, which is of an ovate form, filling the seed-coat as to its transverse diameter, but coming short of it in length. Its boundary lines in this direction are dimly visible, but may be well enough seen by focusing.

The dimensions of the fertile seeds, from an average of several carefully measured with a micrometer, are .014 inch in length by .0065 in width; those of the embryo, .01 in length by .006 in width. The unfertile empty seed-coats are generally much smaller, or about five-sixths the length of the fertile seeds, and not more than half their width, with no swelling. They are clear and colourless, except for the reticulation.

The seed-coat forms a loose sack-like envelope, widely open at both ends, considerably larger at one end than at the other, but not spindle-shaped. It is composed of what seems an open network, of which the meshes are five times as long as wide, apparently formed by flattened cells. Each sack is twisted, so as to make from one-quarter of a turn to a whole turn in its length. The netted texture is most advantageously seen in the empty ones. If I rightly understand the nature of this envelope, its meshes are only in appearance—there are no real apertures; what seem to be such being in truth composed of two laminae, the two surfaces of the flattened cells.

CATTLEYA CRISPA.—A far smaller proportion, not above 2 per cent. (3 in 160) of these seeds are fertile. Their general appearance is as in *Lælia*, but their form is longer, more slender, and more spindle-shaped, one end brought to a point, occasionally drawn out, the other end open. Their dimensions are .0187 in length by .0042 in width; those of the embryo .0084 in length by .0038 in width. The empty ones agree with the fertile in measurement. The network is much finer than in *Lælia*, the meshes closer and much longer, the length being nearly twenty times the width.

It may be interesting to compare with the above details the results of similar observations made on seed from a fine apple-like pod produced by a cross between *Cattleya labiata* and *C. intermedia*. The impregnation was in this case made by Mr. Dominy, who stands in the van of the infant art of raising Orchid seedlings, and to whose politeness I am indebted for the opportunity of making this examination.

About 80 per cent. of the seeds contain an embryo, which it requires a little practice to discern, since the well-filled seeds are scarcely less translucent than the empty seed-coats. The slight yellowish tint, however, betrays them; and then, by focusing, the outline of the embryo can be traced. By means of graduated pressure with the compressorium, while on the stage of the microscope, the pulpy contents of the embryo (which, according to Lindley, "*Vegetable Kingdom*," 2nd ed., p. 174, is "solid, fleshy, without albumen") are pressed out.

The form of these seeds agrees with that described above as belonging to those of *C. crispa*, except in being a little plumper in the centre, measuring about .0180 by .0060 inch.

An extremely curious and interesting phenomenon I observe in connection with these seeds. In many there is seen projecting from the obtuse end of the seed-coat, which is the open end, a short, wrinkled, opaque, blunt point, while in others this is wanting. If a drop of water be introduced into the compressorium, in which the seeds are, without touching them at first, and then, by turning the screw of the compressorium, the drop be gradually flattened so as to reach and embrace the seeds under the observer's eye, the phenomenon I allude to takes place. At the very instant of contact the little opaque point runs out into a long tail of brilliantly hyaline cells, arranged, except near the end, in a double linear series, and each furnished with a nucleus. If the observer's eye be upon one of the seeds in which no projection was visible, the effect is still more startling; for the tail of cells is then seen in a moment to start out from the open end of the seed-coat to a distance of about one-third of the entire length of the latter. By a little manoeuvring I was enabled to discern the origin of this singular filament. On pressing with the nib of a pen on the upper glass of the compressorium, the elasticity of the thin glass enabled me to augment or lighten the pressure by turns more delicately than could be effected by screwing the instrument. As I did this the embryo worked to and fro in the envelope; and, as it did so, projected and retracted the cellular filament, which was now seen to be a process of the embryo itself, springing from its extremity by an enlarged base. I suppose this filament to be

the radicle. Its extreme affinity for water, and the sudden vitality manifested by it in contact with that element, struck me as curious; and certainly to witness the phenomenon is highly interesting. I ought to add that it needs some degree of skill in the use of the microscope to exhibit it.

This seed from Mr. Dominy's cross I sowed on the 19th of March in a thumb-pot plunged in moss in a five-inch pot, the surface thinly covered with living moss, and a plate of dimmed glass set across the outer pot, which was then embedded in coal ashes over a hot-water tank in a temperature of about 80°. In ten days I examined a few of the seeds with the microscope, comparing them with those remaining in the sample unsown. The embryo had become opaque, of a bright green hue, and much plumper, its transverse diameter having nearly doubled. I was surprised that I could find no trace of the cellular filament, which I had supposed, perhaps erroneously, to be the radicle.

At the present time, about ten days later still, I find the embryo still more swollen, so as to be in some cases quite globular; no other change perceptible; no emission of filaments. The earliest process, then, appears to be the absorption of water by the embryo, and the diffusion of formless chlorophyll through the parenchyma.

The results, so far as the production of good seed extends, of these three experiments will stand thus:—

Cattleya, abortive.....	2 per cent.
Lælia, self-impregnated	20 per cent.
Cattleya, impregnated by hand,	80 per cent.

—P. H. GOSSE, *Torquay*.

THE ROYAL HORTICULTURAL SOCIETY'S AZALEA AND ROSE SHOW.

THIS took place on Wednesday last, which was one of those bright sunny days of which this year Spring has stolen so many from Summer. The flowers, too, were dazzling in their brightness—so much so that the eye, after looking at the masses of colour which the Azaleas presented, was glad to rest on the foliage plants by way of a relief. The general features of the Show, as well as some of its particular parts will, doubtless, be fully described by our able coadjutor "D," of Deal, who was busily employed note-book in hand.

Class 1, was for Azaleas of nine distinct kinds; and here Messrs. Veitch took first with, it is almost needless to say, beautifully-grown plants of Comte de Hainault, rose; Magnificent, white; Iveryana, white with carnation stripes, some of the flowers deep rose; Herzogin Adelheid Von Nassau, red, and crimson purple upper petal; Roi Leopold, pale salmon; Rubens, deep red; and Souvenir de l'Exposition, lilac and white.

In Class 2, which was for Amateurs, Mr. Todman, gardener to R. Hudson, Esq., Clapham Common, had the first prize for exceedingly well-grown plants of Concinna, Dr. Livingstone, deep rose; Iveryana, not well out; The Bride, pure white; Duchesse Adelaide de Nassau; Roi Leopold; Model, bright rose with crimson spots; and Rosea Alba, lilac edged with white. Mr. Higgs, gardener to Mrs. Barchard, Putney Heath, came in second, his plants being Beauty of Europe; Trotteriana, magenta; The Bride; Triumphans superba, rosy crimson; Louise Margottin, white; Marie and Iveryana, neither of them up to the mark; Wellington; and Magnifica.

The next Class, 3, was for six kinds, and open both to nurserymen and amateurs; and here again Messrs. Veitch carried off the first honours with Apollo; Queen Victoria, white striped with lilac purple, very fine; Triumphans; Splendens; Iveryana, a handsome specimen, and Petuniflora, deep rose.

Messrs. Ivery & Son, of Dorking, took second with Model, very fine; Crispiflora, rose; Baron de Vrière, salmon pink; Louise Margottin; Criterion, pale salmon, with white edges and crimson-spotted upper petals; and Gem, scarlet.

The third prize was awarded to Mr. Todman, for Dr. Livingstone, Optima, Prestans, Coronata, Novelty, and Eulalie, blush pink with crimson spots.

There were also several very fine exhibitions of Azaleas in the Miscellaneous Class. Those from Mr. Turner, of Slough, were magnificent specimens, forming dense masses of bloom. They were in 13-inch pots, on which account they could not be entered in the nurseryman's class, otherwise they must have carried all before them. They were shown in two collections, one of which occupied the end of the exhibition-room, forming an object which at once arrested the eye on entering, and were

arranged with Mr. Turner's invariable good taste as regards colour. They consisted of Rosy Circle, rosy pink; Vesta, white; Prince Jerome, deep salmon, with crimson spots; Ivoryana, a beautiful compact mass of bloom; Perfection, bright rose with crimson spots; Holfordi, rosy purple; Standard of Perfection, bright rose; Criterion, Gem, Roi Leopold, and Sinensis, rich deep yellow. His other collection consisted of some of the above sorts, with the addition of Duc de Nassau, rosy purple; Duchesse of Nassau; Rosalie; Trotteriana, very fine; Model; Admiration, white, striped with crimson; General Williams, salmon rose; and Chelsoni, orange scarlet, very fine. Messrs. Lane & Son, of Great Berkhamstead, had likewise a good collection; among which were *Conspicua purpurea*, with very large flowers of a lilac purple, with crimson spots; Juliana, salmon scarlet, with crimson spots; fine plants of Roi Leopold and *Præstantissima*, rosy salmon; and Chelsoni.

Altogether the Azaleas, exclusive of Mr. Turner's collection at the far end of the room, occupied 25 yards of stage; and they formed the grand feature of the Show.

In Roses, which will be specially commented on by another hand, Mr. Turner had the first prize for six in pots, which were Général Jacqueminot, Victor Verdier, Baronne Prevost, Coupe d'Hébé, Souvenir de la Malmaison, very fine; and Tea Souvenir d'un Ami. Mr. W. Paul was second with Cardinal Patrizzi, Madame Damaizin; Anna Alexieff and Madame Boll, both very fine; and Tea Souvenir d'un Ami, and Madame Willermoz. Messrs. Paul & Son, who came in third, had Charles Lawson, with large and very fine blooms; Paul Ricaut and President being also well worthy of note.

In the open Class, 6, for four Roses in pots, Mr. Turner had President; Queen of Denmark; Comtesse de Chabillant, very fine, as, indeed, it generally is; and Comte de Cavour, which is much in the way of Général Jacqueminot, but larger and deeper in colour. Messrs. Paul & Son had also a very good four, of which Général Jacqueminot and Victor Verdier were the finest.

Messrs. Lane & Son exhibited in the Miscellaneous Class twelve Roses in pots, among which were Louise Margottin, a beautiful delicate pale rose; Turenne, glowing colour but loose; and President Lincoln, deep velvety red, a good deal in the way of *Senateur Vaise*.

Cinerarias made a tolerable show, though there were not so many exhibitors as might have been expected in the case of a plant so useful for conservatory decoration, and of which their culture is so well understood. The specimens exhibited were, however, very creditable. The first prize in sixes was awarded to Mr. Lamb, gardener to Captain Cahill, of Southall, for Adam Bede, vivid purplish-rose and covered with a profusion of flowers; Queen Victoria, rosy crimson with white ring; Lady Seymour, white, deep blue edge; Mrs. Livingstone, rosy purple with white ring; Zingaree; and Loveliness. The second prize was awarded to Mr. P. Lamb, for Blue Bonnet, Lady Seymour, Admiration, Pilot, and Masterpiece; and third prizes to Mr. Holland, gardener to R. Peak, Esq., Isleworth; and Mr. Turner, of Slough.

Prizes were offered for greenhouse Acacias, but they did not induce competitors to come forward, although several good specimens were shown among the miscellaneous collections. With regard to Auriculas, Polyanthus, and Pansies, their return to the exhibition tables seemed to give satisfaction to a considerable portion of the visitors, judging from the interest with which the flowers were examined; and the feeling expressed in the remark which one old lady made in our hearing, "Well, I am glad to see these old flowers back again," was probably very generally shared. The principal exhibitors of these flowers were Messrs. Turner, Butcher, James, and Holland; but it is unnecessary to enter into detail here, as the merits of the different objects exhibited will be amply discussed in another column.

Of Cyclamens, those from Mr. Holland, of Isleworth, were remarkably fine both as regards the size and colour of the flowers; the varieties, however, were unnamed. To these the first prize was awarded; and an extra one was given to Mr. James, gardener to W. Watkins, Esq., for herbaceous Calceolarias, of which he showed several fine varieties.

Miscellaneous collections of stove and greenhouse plants came from Messrs. Veitch; J. & C. Lee, of Hammersmith; Bull, of Chelsea; F. & A. Smith; and Cutbush, of Barnet. In Messrs. Veitch's collection were two Acacias, *grandis* and *Drummondii*, the latter a fine specimen plant; *Rhododendron jasminiflorum*; also *Sesterianum* with large and beautiful white flowers;

several Azaleas; *Hedera tulipiferum*; *Eriostemons*; *Tetratheca ericæfolia*, a very handsome specimen covered with bloom; *Dendrobium densiflorum album*, with several fine spikes of bloom; *Ærides virens*; and *Anthurium Scherzerianum*, the brilliant scarlet spathe of which always calls to mind the ancient Roman standard. For this collection the first prize was awarded.

Messrs. Lee, who had a second prize, likewise exhibited an excellent collection, among which were a fine specimen *Epacris miniata*; Azalea Leesana, a handsome plant with large white flowers; Broughtoni; and several other fine Azaleas; *Eriostemons*; Heaths; *Saccolabium retusum*, with a beautiful raceme a foot long; and *Ærides roseum*, with two good spikes of its pretty rose-coloured flowers.

Mr. Bull likewise contributed an excellent collection, consisting almost exclusively of foliage plants, such as *Pandanus elegantissimus*, *Gleichenias*, &c., noticed on previous occasions.

The collection of Messrs. F. & A. Smith was composed of foliage plants as *Cyanophyllum* and *Allocasia*; some Azaleas, *Eriostemons*, *Erica affinis*, &c.; and that of Mr. Cutbush, of Barnet, was chiefly made up of Azaleas, with *Tetratheca ericæfolia*, but nothing equal to Messrs. Veitch's plant of the same kind, an *Aphelexis*, an *Eriostemon*, and one or two other plants.

Of other objects not coming within the scope of the schedule, S. Glendinning & Sons sent two trees of Fortune's rose-flowered Peach, a highly ornamental double variety, brought some years ago from the north of China. Mr. Bull exhibited the same groups of Geraniums and Petunias as shown at the Regent's Park on the previous Saturday; while Messrs. E. G. Henderson and Co. brought forward a group of perennial plants for flower-garden decoration, among which were Sunset and Mrs. Pollock Geraniums; white-foliaged plants, as *Centaurea candidissima*; a variegated Daisy called *Aucubæfolia*, the leaves of which were prettily variegated with yellow, as in the *Aucuba japonica*, and which would make a pretty edging plant; also *Govenia albicans*, with ornamental yellow flowers, and a variegated form of *Arabis alpina*. Hyacinths were shown in good condition by Messrs. Cutbush and Mr. Carr, of Highgate, the former having also six showy varieties of *Amaryllis*; Hardy Ferns by Messrs. Ivory and Son; and six fine pans of *Lycopods* by Mr. Higgs. A fine mass of the mauve bracts of *Bougainvillea glabra* came from Mr. Daniels, gardener to the Rev. C. Ruck Keene, Henley, and speciosa in small pots from Mr. Turner, of Slough, and Mr. Bull. Lastly, there were boxes of beautiful cut Roses of all the leading kinds from Mr. W. Paul, and Messrs. Paul & Son.

A BRILLIANT day, an excellent collection of flowers, and a goodly company, conspired to make this the most successful of the Spring Shows. But (why always these "buts" where the Royal Horticultural Society is concerned?) there were some drawbacks. In the first place the *tout ensemble* of the Show was completely spoiled by the flowers being separated in two of the corridors, or dining-galleries; for, as it had been wisely determined not to put the plants down both sides of the room, and thus to allow more ample sweep for the crinolines, this of necessity led to the separation of the flowers, and spoiled the appearance of the Exhibition. And, then, no precaution had been taken to wet the floors, either the previous night, or the morning of the Exhibition; and the consequence was that a cloud of dust, which would not have disgraced Rotten Row, was continually kept in circulation by the sweep of the ample dresses of the ladies. Over and over again I heard ladies say, looking into the room, "Dear me, what a dust!" and unconsciously leave. One cannot but ask why, as the Society must ultimately look to its exhibitions for a good portion of its funds, they should seem to have only a secondary place in the arrangements of the Council. The arrangements for these Spring Shows have been a series of makeshifts, and so every one has felt them to be.

And now to our special matter—the florists' flowers. Auriculas we were rejoiced to see are once more becoming popular. I have done my little best to make them so; and although, owing to the wretched arrangements of the South Eastern Railway, my own plants which arrived in London at noon on Tuesday were not delivered till nearly four and twenty hours afterwards—too late for the Show, I was myself unable to compete. I none the less rejoiced to see that several "new hands" too, although old growers, had come forward this time, and that there is every probability ere long of this beautiful spring flower resuming its old position around the metropolis.

Mr. Turner had, in our southern taste, some marvellously fine plants and flowers; and, although no competitor entered the lists with him, one may very safely say that it would have required something super-excellent to have beaten him. His twelve were, Duke of Cambridge, Pizarro, Mrs. Sturrock, Sir C. Napier, Am. Smith, Lovely Anne, Glory, Mary Ann, Catharina, Perfection, Apollo, and Smiling Beauty.

Amongst Amateurs, Mr. Butcher was first with Eliza, Badajoz, Duke of Wellington, Glory, Sir J. Moore, Pizarro, Favourite, and Privateer. Mr. James was second with Duke of Wellington, Eliza, Bright Phœbus, Lady Jane Grey, Duke of Cambridge, Mary Grey, Lady Blucher, and Robert Burns. Mr. Potts was third; and Mr. Holland exhibited some rather promising seedlings. Besides these Mr. Turner had a collection of twenty-eight varieties, amongst which were Ashton's Prince of Wales, Blackbird, Spalding's Metropolitan, Formosa (a most lovely shade of colour), Mary Gray, Eclipse, Lady J. Grey, Bellona (somewhat rough), Countess of Dunmore, &c.—altogether a very pretty show, and one which was evidently appreciated by many of the visitors.

Mr. Holland sent six Alpines, two of which I should not have considered to belong to that class.

A box of Pansies was sent by Mr. James; and also Fancy Pansies in pots. It is, however, somewhat too early in the season for them. We observed amongst Mr. James's flowers Lord Clyde, Telegram, Rev. H. H. Dombrain, Maid of Bath, Canary, &c.

Two collections of cut Roses came from the two firms of the brothers Paul, and were considered of equal merit. Amongst the newer varieties we noticed Beauty of Waltham; Madam C. Wood, very large; Eugène Lebrun, dark and well-filled; Jean Goujon, dark, not very full; Olivier Delhomme; John Hopper; Louise Margottin; Maurice Bernhardt, dark crimson and fine; Le Baron Rothschild, very brilliant and shell-like; Cornelia Kock, pale citron Noisette.

Besides many of the older flowers in good condition, the pot Roses were excellent—not the great gawky things one sees at the great shows supported by a forest of stakes, &c.; but neat, natural-looking plants, especially those of Mr. Turner, who has taken the place I was sure he would do, beating in Sixes his old-established competitors, the Messrs. Paul. His six were Souvenir de la Malmaison, Baronne Prevost, Coupe d'Hébé, Général Jacqueminot, Victor Verdier, and Souvenir d'un Ami. Mr. W. Paul was second with Cardinal Patrizzi, Madame Damazain, Anna Alexieff, Madame Boll, Souvenir d'un Ami, and Madame Willemoz. Messrs. Paul & Son were third with Paul Ricaut, President, Madame de Vetry, Jules Margottin, Charles Lawson, and Madame Damazain.

In Four Roses the same gentlemen were first with Jacqueminot, Souvenir d'un Ami, Belle de Bourg-la-Reine, and Victor Verdier. Mr. Turner was second with Souvenir de Comte Cavour (beautiful), Comtesse de Chabillant, President, and Queen of Denmark. The first-named was most beautiful, fine in shape, and brilliant in colour. Mr. Wm. Paul was third. Messrs. Lane had also a nice collection, not for competition, among which was President Lincoln, a promising flower; and Mr. Turner had a nice plant of that beautiful Tea-scented Rose L'Enfant Trouvé.

The Cinerarias I shall not attempt to speak of, farther than to say that I think there is a great mistake in the mode of exhibiting them. On the home-stage they are very pretty, but on an exhibition-table, tied-out and staked as they generally are, they are to my mind anything but ornamental.

There was a large collection of Hyacinth blooms sent by Messrs. Krelage, of Haarlem, which did not give one a very exalted idea of Hyacinth-growing on the Continent, containing nothing of novelty, except a curious-looking flower called L'Enfant de France.

There can be no doubt that these Spring Exhibitions greatly stimulate the growth of flowers; and another year will, I hope, lead to a more agreeable arrangement than the present season has witnessed.—D., Deal.

RED CAMOMILE TO DESTROY INSECTS.—The *Journal d'Horticulture de Belgique* states that a powder made from the flowers of Red Camomile (*Pyrethrum roseum*) emits "an odour so strong and penetrating that it kills all the insects and all the vermin of which until now no certain agent of destruction has been found."

NIEREMBERGIA GRACILIS.

LIKE your worthy correspondent Mr. Earley, I admire this pretty and interesting plant; but I fear I cannot vouch for its hardiness, although twice during the last fifteen years I have had beds of it that stood the winter pretty well. Strange to say, the most of the plants that I left in a bed the past winter are dead, though the situation is by no means a damp one, and the winter was unusually mild. I have been led to regard damp as more fatal to it than cold, as the parts of the plants now alive seem to be the extreme tips. I have, however, had a bed that stood through the winter, and flowered early and well, and it continued to do so the whole season. Such, however, was not the case with *Calceolaria*-beds that had stood and flowered in like manner; for they bloomed very abundantly early in the season, and, dry weather setting in soon afterwards, the after-bloom was anything but plentiful. This was in the summer of 1851, and the same thing has occurred once since then. Latterly, excepting for some special purpose, I have preferred destroying *Calceolaria* every season rather than run the risk of the uncertainty mentioned above.—J. ROBSON.

ORCHARD-HOUSES.

"Oh, wad some power the giftie gie us,
To see oursel's as others see us,
It wad frae monie a blunder free us,
And foolish notion."—BURNS.

IT is amusing to see with what pertinacity some people will ride their hobby. No sooner is an insinuation made against orchard-houses, or, more properly, fruit trees in pots, than up starts the champion, "R., of S.," who tells us in *THE JOURNAL OF HORTICULTURE* of last week, that "he has one quality which carries, and has carried, Englishmen through many ill-organised plans and many scrapes, and made them triumphant in so many quarters of the world—the most dogged perseverance." But perseverance would be more commendable in well-organised plans, which would save him from many scrapes. Can the gardener or amateur be sanguine of success when he is told in the *Journal* of the same date, by "DUCKWING, — Rector," that "the Plums, Vines, and Cherry I may dismiss at once, with an acknowledgment that I could get no blossom to set on the Plums and Cherry, and but few bunches, and those very poor, on the Vines. The Apricots have not done well. I have never had more than six or eight on a tree?" This communication was headed, "Merits of Orchard-houses." If such is the merit, I should think the demerit would be prodigious. Mr. Pearson also tells us in the *Journal* of the same date, that "Pears are not grown in my house because they were never good with me."

We are also told that Peaches and Nectarines are the only trees that have done well: therefore, "orchard-house" is a misnomer, it should be called the "Peach-house."

Gardeners should bear in mind the advice given in the preface to the "Theory of Horticulture." "The difference between failure and success, in practice, usually depends upon slight circumstances, very easily overlooked, and not to be anticipated beforehand, even by the most skilful; their importance is often unsuspected till an experiment has failed, and may not be discovered till after many unsuccessful attempts, during which more mischief may be done by extensive failures than the result is worth when attained. No man understood this better than the late Mr. Knight, who tells us in the following pages that it is the duty of gardeners to put in practice that which they have learned; and having to expend the capital of others, they ought to be cautious in trying expensive experiments, of which the results must necessarily be uncertain; and, I believe, a very able and experienced gardener, after having been the inventor of the most perfect machinery, might, in very many instances, have lost both his character and his place before he had made himself sufficiently acquainted with it, and, consequently, become able to regulate its powers."

It was a wonder, by-the-by, that Dr. Lindley did not think of this advice when he endeavoured to goad gardeners into an advocacy of the Polmaise system of heating.

Amateurs may try experiments, and blame themselves for failures; but if a gardener undertakes them he is responsible to his employer. The coiling-system of growing Vines in pots was strongly advocated by the late Mr. Mearns, at Welbeck; but of five hundred grown, fifty were fruited for exhibition, and when many gardeners lost their places, depending by limited means on a few for success, my esteemed friend Mr. R. Fish exploded

the whole in his correspondence on the subject. Whether he will give a *coup d'état* to the orchard-house question, time, after a little more investigation, will most probably tell.

The question resolves itself into the old epigram of the town in danger.

"A currier, wiser than all put together,
Says, 'Gentlemen all, you may think as you please,
But there is nothing like leather.'"

—WILLIAM KEANE.

ROSES.

MR. WILLIAM PAUL'S NURSERIES, WALTHAM CROSS.

THE great pleasure derived from a visit made a fortnight since to Mr. Wm. Paul's Nurseries induces me to remind amateurs and others, that a short railway trip by the Eastern Counties to Waltham Cross at the present season will afford them much gratification. Although the Roses were my special attraction, I cannot refrain from noticing the extensive and superb collection of well-grown Hyacinths then in perfection. Mr. Wm. Paul's success in the cultivation of this lovely spring flower is well known to the floricultural world; and the Hyacinths exhibited by him at the spring meetings at the Royal Horticultural Gardens, South Kensington, and the Royal Botanic Gardens, have been highly spoken of in the reports of these Exhibitions. The names and colours of the leading varieties have been fully described; and those who intend to grow Hyacinths next year would do well to procure Mr. Paul's catalogue of bulbs, 1862, and make notes of such flowers as have merited distinction.

But the Roses were my special attraction. It is impossible to describe the feelings which were excited on finding oneself in the last week of March standing amongst a vast group of well-grown and abundantly-flowering Roses. The peculiar brightness and vigour of the spring-green foliage with the brilliant and exquisitely scented flowers transferred me into Fairy Land. It is only of recent date that the luxury of early-flowering Roses has been indulged in. The treatment required is so simple and inexpensive; and the result attending the culture, which is generally so successful, furnishes a strong inducement for those who have space and opportunity to devote a crystal palace for the spring residence of the queen of flowers. A visit to the garden at Waltham Cross would verify these remarks; and any information desired on the subject will be always most willingly and courteously given. I shall send the names of some of the most striking varieties, whose merits I shall not attempt to describe; but most earnestly recommend all admirers of the Rose, and more particularly those of early-forced flowers, to lose no time in judging for themselves how easy a thing it is to enjoy the privilege and pleasure of having Roses in the highest state of perfection at this season of the year.

The following were among the varieties in bloom at the time our visit was made; but many others have since unfolded their lovely flowers, and among them will now be found one named after Mrs. W. Paul, the excellent form and surpassing beauty of which I will not venture to depict:—Charles Lefevre, Maurice Bernhardt, Eugène Bourcier, Monte Christo, Modèle de Perfection, Vicomte Vigier, Duc de Cazes, Louis XIV., Comtesse de Chabillant, Gloire de Santenay, Comte de Falloux, Louise Darzins, Prince Léon, François Louvat, Gloire de Dijon, Tea Madame de St. Joseph, and Tea Comtesse de Bartha, and many others. —X.

ROYAL HORTICULTURAL SOCIETY.

APRIL 15.

FLORAL COMMITTEE.—Another meeting of the above Committee was held in the Gardens, South Kensington, on Wednesday last, on the day of the third Spring Exhibition, which was especially appointed for Azaleas and Roses. Many very interesting specimens were brought before the Committee, and several certificates were awarded.

Mr. W. Paul, Waltham Cross, exhibited a very handsome *Magnolia Linné*, with large conspicuous purplish flowers. This plant was much admired, and received a first-class certificate. He had also a very promising bright carnation Perpetual Rose, Lord Herbert, which was requested might be seen again.

Mr. H. Page sent a white *Cineraria*, Snowflake, of dwarf habit a second-class certificate was awarded.

Messrs. Veitch sent *Alocasia zebrina*, a plant with large green

foliage on mottled stems: first-class certificate was awarded. An interesting though small Fern, *Cheilanthes Borsigiana*, the under side of the frond densely covered with gold: first-class certificate was awarded. *Browallia* species, with yellow flowers; *Azalea Marie Vervaene*, bright salmon, sometimes striped; *Azalea Madame Verschaffelt*, a showy decorative variety: second-class certificate was awarded. *Azalea Madame Dieudonné Spae*; also a half-hardy plant, *Valdivia Gayana*, with deep pink bell-shaped flowers; foliage not unlike a primrose.

Mr. Ivory, Dorking, sent *Azalea Beauty of Dorking*, a white flower striped with pink, of excellent form: a second-class certificate was awarded. *Azalea indica striata*, and *Athyrium Fieldii pumilum*, an interesting dwarf variety, but resembling closely *Athyrium Fieldii Iveryanum*.

Mr. Bull sent *Gloxinia Florette*, an erect-flowering variety, with white flowers, tinged or shaded with lavender. *Anthurium* sp., South America, a plant remarkable for its thick leathery leaves: a label of commendation was awarded. *Greenzvia aurea*, an old plant brought again into cultivation, forming a very handsome specimen, with bright yellow flowers, which were well displayed above the thick Sedum-like foliage: a first-class certificate was awarded. *Trichomanes membranaceum*, not in condition, requested to be shown again. *Uropedium Lindeni*, a very curious but well-known Orchid, with yellow and greenish flowers, remarkable for its long brown thread-like appendages. Three small pots of *Bougainvillea speciosa*, in full flower: a special certificate was awarded.

Mr. Turner, Slough, also sent a small plant of *Bougainvillea speciosa*, in full flower. This, as well as Mr. Bull's specimens, were struck from cuttings last autumn by Mr. Turner. The appearance of the small flowering plants of the *Bougainvillea* caused quite a sensation among the Committee. So much has been written about the successful cultivation of this plant, and the acknowledged difficulty in making it produce flowers, a special certificate was awarded Mr. Turner for his great achievement. *Azalea Louise Von Baden*, an exquisite white flower, of great substance and good form, the finest *Azalea* exhibited: a first-class certificate was awarded. Mr. Turner sent also two *Auriculas*—*Ensign*, a fine grey-edged variety, was awarded a second-class certificate; *Supreme*, an alpine, dark maroon border, with a bright circular yellow centre—a label of commendation was awarded. *Pansy Exquisite*, large flower, white ground, belted with violet, good eye—label of commendation. *Pansy Feu de joie*, a Fancy flower, upper and side petals white, ground shaded with mulberry, a large dark maroon centre—label of commendation.

Mr. Bragg sent a white bedding *Pansy Desirable*, flower not of sufficient substance. Messrs. Downie & Laird, a Tree *Carnation*, *Souvenir de Malmaison*; the flower a monster in size and monstrous in form. Mr. Parsons, *Cineraria Malvoisa*, a deep magenta.

Mr. Standish, Ascot, sent *Kerria japonica variegata*: a label of commendation was awarded. Also a pale pink, semidouble-flowering *Cherry* from Japan, which was awarded a label of commendation.

Messrs. Henderson, Pine Apple Place, sent *Camellia Giardino Santarelli*, a beautiful and promising flower, but, as exhibited at the last meeting, not in condition; *Tropæolum Ball of Fire*, a very bright scarlet-flowering variety, which was requested to be shown again to be compared with other *Tropæolums* in cultivation; *Retinospora leptoclada*—first-class certificate was awarded; and *Cupressus Lindleyana*.

Mr. Mills sent cut specimens of his Rose, *Pet*—a useful Rose for forcing, not very unlike *China Rose Archduc Charles*.

Mr. Hooper, Covent Garden, exhibited cut specimens of a very dark double *Polyanthus*, an improvement on the old variety, the bright yellow base of the petals rendering the flower more conspicuous.

Messrs. Smith, Dulwich, sent again *Azalea Surprise*, which on comparison very strongly resembled (as had been remarked on a previous occasion), *Azalea Madame Verschaffelt*.

FRUIT COMMITTEE.—Mr. Edmonds in the chair. Prizes were offered for the best three dishes of dessert Apples, for which there were four competitors. Mr. Cox, of Redleaf, sent remarkably fine specimens of *Golden Knob*, *Rosemary Russet*, and *Formosa Pippin*. In regard to appearance, both as to size and colour, they were much superior to the other exhibitions; but on cutting them they were all found to be passed and the flavour gone. Mr. Whiting, of the Deepdene, sent Herefordshire *Pearmain*, which was of good flavour but not fine; *Mickleham*

Pearmain, which bears a very close resemblance to Formosa Pippin was also pretty good; but Court-Pendu-Plat were as fine, both in regard of appearance and flavour, as could be desired. Mr. Hall, gardener to Captain Tyrrell, Fordhook, Ealing, sent Bess Pool, which was rather mellow, but of good flavour; Cluster Golden Pippin, hard, acid, and without any flavour; Golden Russet, inferior. Those exhibited by Mr. Earley, of Digswell, were Sam Young, Court of Wick, and Cackle Pippin, all inferior in size and flavour. The first prize was awarded to Mr. Whiting, and the second to Mr. Hall. Altogether the collections exhibited were not of a high order, not any of the specimens possessing the flavour desirable. The two best were Court-Pendu-Plat and Bess Pool, both two valuable Apples.

In Class B, four kitchen Apples, Mr. Whiting sent an unnamed variety, Royal Russet, and Devonshire Buckland. Mr. Earley sent excellent specimens of Hertfordshire Codlin, Norfolk Beefing, and Dumelow's Seedling; and Mr. Hall sent Norfolk Beefing, Dumelow's Seedling, and Yorkshire Greening. The first prize was awarded to Mr. Hall, and the second to Mr. Earley.

For the best dish of Strawberries there was only one exhibition, but a fine one. Mr. Barnwell, gardener to E. Mills, Esq., Bisterne Park, Hants. The sort was represented to be Keene's Seedling, but it appeared to us to be more like Sir Harry from the great size and very dark colour. The first prize was awarded to Mr. Barnwell.

Mr. Hill, of Keele Hall, sent five bunches of very beautiful Black Hamburg Grapes, large in size, and fine in colour, being perfectly jet. These were exhibited as specimens of what Mr. Hill has been cutting ever since the beginning of March. A very nice collection of salad plants was exhibited by Mr. Terry, gardener to Lionel Ames, Esq., The Hyde, St. Albans; it consisted of Cos Lettuce, Endive, Chervil, Tarragon, young Onions, Water Cress, Celery, Beet, Corn Salad, Long Radish, Turnip Radish, Mustard, Cress, and three young Cucumbers. The Strawberries exhibited by Mr. Barnwell formed part of a very neatly arranged box, containing some handsome Cucumbers and kitchen Apples. He also exhibited three remarkably fine heads of Broccoli, beautiful spring Cabbage, Spinach, and a fine dish of Mushrooms.

A seedling Apple of large size was received from W. B. Tyingham, Esq., Tyingham, Newport Pagnell. It is a large handsome Apple, roundish, and in size and shape like the Alfriston, and, like it, is covered with tracings of reticulated russet; but it is of a fine deep yellow colour, and has a blush of red on one side. The eye is small and closed, set in a narrow and rather deep basin. The stalk is very short, almost imbedded in the broad and russet cavity. The flesh is yellowish, tender, and fine-grained, and with a very excellent flavour and delicate aroma. This will be useful either as a kitchen or dessert Apple, but principally for the former, and it is said to keep till June and July. It was awarded a first-class certificate.

Mr. Ferguson, of Stowe, sent a seedling Apple the flavour of which was destroyed by having been in contact with some substance like moss.

Mr. Turner, of Slough, sent fruit of a seedling Strawberry called President, which had not much flavour. It evidently belongs to the race of Scarlets, and is a handsome-looking fruit; but the flavour will, doubtless, be improved later in the season.

T. B. Horsfall, Esq., M.P., Bellamoor Hall, near Rugeley, exhibited a very large bunch of *Musa Cavendishii*.

Mr. Ingram, gardener to His Grace the Duke of Rutland, Belvoir Castle, sent a dish of *Beurré de Rance* Pears, which were very fine in appearance, but they lacked flavour.

A PLEA FOR THE OLD FLUE—A GOOD BOILER ASKED FOR.

As the subject of heating horticultural structures is very properly attracting the attention of your readers, I beg to make some further remarks on the matter, and in the present instance I confess that it is as much with the view of eliciting information as of imparting it to others. Before proceeding further with the subject, I must thank those correspondents who have kindly come forward and given their opinion on the utility of the old and much-despised flue, as well as the more modern hot water.

The letter of "E.," at page 211, sets forth in a plain practical way the economy of the flue in places where coal is cheap, and

all intending builders of glass houses would do well to read his article. A heating apparatus capable of warming a house 40 feet long by 15 feet wide is put up for 50s. while the cost for fuel for the winter may be set down at 10s. or 12s., or less, and assuredly these figures are small enough for the most rigid economist.

In confirmation of the easy and useful working of the flue, the letter of Mr. Harris, at page 223, is equally valuable, and it states that Pines, Vines, Peaches, and plants can be forced or grown as well in houses heated with flues as with hot water, and as Mr. Harris has had experience in both, he may justly be allowed to have given an unbiased opinion. Contrasted with this is the letter of "J. E. L.," at page 258, who says, with one or two exceptions flues are a dead loss as compared with hot water, as flues are always out of repair, let the smoke out, cause nasty smells, and are accompanied by a dozen other annoyances. This is rather strong language on the part of "J. E. L.," whose after-remarks are also hostile to the old flue, and in praise of hot water. Now, I believe there are few people indeed who would not prefer a well-arranged system of hot-water-heating to the best smoke-flue in the world, were the cost of erecting the two somewhat alike; but I ask "J. E. L." and all others what sort of a hot-water-heating contrivance could be put up even at four times the cost, or £10, which will heat such a house as our correspondent "E." mentions, and be it remembered, that hot-water pipes are liable to mishaps as well as flues, and such accidents are more difficult to rectify. Any one can daub a little clay or mortar on a leaky flue, and it will go on for weeks as well as before, but it takes some time to replace a split boiler, and very often such misfortunes happen at the most unlucky time, as during the period of a sharp frost, or in the early spring forcing time, and the injury and inconvenience need no comment. I once had a boiler that broke down about Christmas, and the new one that replaced it gave way in less than a week after it was fixed, so that altogether about a month was lost, to the entire destruction of the permanent plants in the house. I do not remember of any such mishap befalling a flue in any part of my practice, although at one time I had upwards of twenty flue fires to manage. In saying this I by no means deny the likelihood of accidents with flues, but it is always easy to find a man capable of mending a flue, while the hot-water-pipe man is too often far away, and his operations are of a far more costly character than those in the other case.

Having given my views in a general form in a former article, I have but little to add now, excepting to repeat that I am by no means an opponent of hot water; but when the heat required is simply that sufficient to keep out a frost, or when, say, a temperature of 40° is wanted, the cheaper the heating contrivance that will accomplish that object, so long as it is effective, the better it is. Our correspondent "E." has shown that a house 40 feet by 15 can be heated with a flue for one-tenth of the sum that would be required for hot water. In his case, therefore, it would appear that he might have another small house for the amount he saves; at the same time it must be borne in mind he lives in the coal country, and some little allowance ought to be made for that. A hot-water apparatus is very defective indeed if a ton of coals will not command more heat by its means than by the flue; and when coals are 25s. instead of 2s. per ton, economy in them is of consequence. I wish in every instance to treat the matter impartially, and will, therefore, state that when the heat wanted is a continual temperature of not less than 55°, and fuel expensive, hot water may be more advisable. This, I believe, I fully explained in my former article, and the merits of flues being admitted by the correspondents alluded to, and as their utility ranks back at least a century prior to hot water, it is likely they may yet continue for a long time in use.

As "J. E. L." advocates hot water so strongly, perhaps he will give me some advice on the following points. Like Mr. Pearson, at page 257, I am far from certain that the best constructed boiler has been yet before the public, and, accordingly, I am far from being biased in favour of any particular one. The case is this:—My employers are about to erect a new lean-to house 68 feet long by 15 feet wide inside, and as it will be mostly devoted to forcing it will be heated with hot water, but not being connected with the other houses must be heated by a separate boiler. Now, I ask, Which is the best boiler? Every one understands the condition which this question conveys; but I confess being anything but sanguine as to the best-constructed one yet out being any way near perfection. I was once called on to look at a boiler in working order which was said to be

doing its work well, while the waste of heat was so great that a paper might be lighted at the top of the chimney. Economy of fuel must, therefore, be one of the requisites. I may add that we have in use three conical and two rather large corrugated saddle boilers, all of them tolerably good, but all, I think, capable of improvement. Another boiler of a different construction is less satisfactory, while Perkins's coil of pipes in use at the mansion is not adapted to gardening purposes.

If the house in question had been only intended for greenhouse plants, I would have been contented with a flue such as was described in a former article; but more heat being wanted, in what way is that to be effectually and economically obtained? Without being in the least prejudiced, I have rather a dislike to patents. They fetter rather than improve what originally existed, and in more cases than one that I could mention, they have proved losing affairs to those who took them out. This, however, is foreign to my subject, as I simply ask which is the best hot-water-heating contrivance at present in use. I shall be glad to have the opinion of practical men on the subject, and the question is one well worth discussing in the columns of THE JOURNAL OF HORTICULTURE. A few plain suggestions on the heating of a given space will suffice, and if we take as an example the house in question, which will contain a volume of 260 or 270 cubic yards of atmospheric air, might I ask for what could a hot-water apparatus be obtained that would efficiently heat that? and as a contrast between this and flues, it will be as many pounds as our correspondent "E." said his cost shillings. This, however, I leave for others to say. At the same time those who have a shallow pit heated well by somebody's boiler, must make some calculation of the small volume of air it has to work upon, and not too hastily pass any eulogium on its merits. To economise heat to the utmost is one of the best qualifications of a boiler, and whether this is already done in any of the boilers we now have or not is more than I can say. At all events let us determine which is the best.

J. ROBSON.

THE BARBADOES POTATO.

I HAVE not as yet been able to discover this valuable variety. Many people have fancied that they had it; but on examination their specimens, although somewhat resembling the old sort, have differed in the most important features.

This Potato is something like a Yam in shape, is often a foot in length; it has a skin as smooth as satin; it is very mealy with a rich flavour, and very prolific. It is also one of the earliest sorts. There has been no crop of it in this neighbourhood for seventeen years. Has this variety become extinct?—A CONSTANT READER.

[Messrs. Peter Lawson & Son, Nurserymen, Edinburgh, may have this Potato. They thus describe it in their "Agriculturist's Manual":—"Height of stem 2½ feet, rather upright; foliage loose and light green; flower light purple; tubers oblong, whitish, straight, much flattened, rather small, skin sometimes slightly tinged with red near the point. Increase ten-fold. Rather waxy, goodish flavour, pretty healthy, 672 grains troy of starch in 1 lb. of tubers."—Eds.]

GARDEN HELPS.

THE "helps" I have in my garden are the elder children. I get them up in good time in the morning, and then again after school-time. The exercise is healthful, and reward sweetens labour, as I give them 1d. per hundred for slugs and snails, and 1½d. per hundred for caterpillars.—D., *Newcastle*.

[The "yellow reptiles" are centipedes, and we believe not injurious to plants. We always consider that they consume decayed organic substances.—Eds.]

SPARROWS DESTRUCTIVE TO LETTUCE.

I AM fond of Lettuce, nothing to my mind being more refreshing than a nice White Paris Cos, fresh from the garden, with the usual et-ceteras. But the sparrows are also fond of their salad—a similarity of taste by which I have lately been a sufferer.

Last Friday I planted out a small crop, the plants used being rather young and tender; on Saturday they remained uninjured, but on Sunday the attack began, and I observed several sparrows

busily engaged with the green leaves. I determined that the bed should be protected by twine as soon as Monday came, but by that time every green leaf was gone. Not having any more plants I have had to sow again.

Having said this much against sparrows, it is but just to state in their favour that they were also busily employed in picking up insects on the adjoining new-dug ground. A market-gardener of great experience lately told me that, though troublesome at times, he considered the sparrow was the most useful bird we have.—TYRO.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CŒLOGYNE LAGENARIA (Flask-shaped Cœlogyne).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Native of the Himalaya, bloomed at Messrs. Jackson's Nursery, Kingston-on-Thames. Flowers white, lip blotched with crimson. Unfortunately the leaves do not appear at the time of the flowers.—(*Botanical Magazine*, t. 5370.)

ENCEPHALARTUS HORRIDUS, var. **TRISPINOSA** (Three-toothed Encephalartus).—*Nat. ord.*, Cycadaceæ. *Linn.*, Dioecia Polyandria. Native of the Cape. The species has been called also *Zamia horrida*.—(*Ibid.*, t. 5371.)

CODONOPSIS CORDATA (Heart-leaved Codonopsis).—*Nat. ord.*, Campanulaceæ. *Linn.*, Pentandria Monogynia. Native of moist woods in mountains of Java, at elevations between 3500 and 8000 feet. A gracefully climbing plant with sickly-green flowers.—(*Ibid.*, t. 5372.)

LYCIOPLESIUM PUBIFLOEUM (Downy-flowered Lycioplesium).—*Nat. ord.*, Solanaceæ. *Linn.*, Pentandria Monogynia. Very handsome and coming from near Chiloe, probably hardy. Introduced by Messrs. Veitch & Sons through their collector Mr. Richard Pearce. Flowers purple, and remind one of the Foxglove.—(*Ibid.*, t. 5373.)

CYRTANTHUS LUTESCENS (Yellow-flowered Cyrtanthus).—*Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia. Cape bulb. Flowers graceful and very fragrant, produced in a warm greenhouse during February. Introduced by W. W. Saunders, Esq.—(*Ibid.*, t. 5374.)

CALANTHE VEITCHII HYBRIDA (Veitch's Calanthe).—A garden hybrid. Flowers pink. Obtained by Mr. Dominy, in Messrs. Veitch & Sons' Nursery at Exeter, by fertilising *Limatodes rosea* with the pollen of "that variety of the white *Calanthe vestita*, which has a purple spot at the base of the lip."—(*Ibid.*, t. 5375.)

FREE-FLOWERING MONOCHETUM.—Introduced by Messrs. Smith, Nurserymen, Dulwich. Flowers deep pink. A variety of *Monochetum sericeum*.—(*Floral Magazine*, pl. 141.)

DISK-SHAPED NEMOPHILA.—A variety of *Nemophila maculata*, raised by Messrs. Carter & Co., High Holborn. Corolla white, with the entire base of the disk deep purple.—(*Ibid.*, pl. 142.)

STRIPED JAPANESE CHRYSANTHEMUM.—Exhibited by Mr. Standish, Royal Nurseries, Bagshot and Ascot, who received it from Mr. Fortune. Florets some red and some white, with others striped longitudinally red and white.—(*Ibid.*, pl. 143.)

VARIETIES OF CAPE HEATHS.—Messrs. Rollisson, of Tooting. "*Erica profusa* (pink with white disk), raised between *Erica Macnabiana rosea* and *E. aristata major*, the former being the mother plant. *Erica affinis* (lemon-coloured), raised between *E. Cavendishiana*, also Messrs. Rollisson's seedling, and *E. depressa*, the last-named being the mother."—(*Ibid.*, pl. 144.)

CHRYSANTHEMUMS, raised by Mr. Salter. *Talbot*, "a deep rosy lilac with silvery tips," head close and full. *Princess Alexandra*, "outer florets deep blush-lilac on the outer surface, creamy within, and the central florets lemon-coloured," heads incurved and well filled-out.—(*Florist and Pomologist*, ii., p. 42.)

APRICOT CANINO GROSSO.—An Italian variety, from Canino, in the Papal States. Introduced by Mr. Rivers, Nurseries, Sawbridgeworth. Fruit larger than the Royal, melting, excellently flavoured, and peculiarly high-coloured; orange and red on the sunned side. Tree hardy and free-growing.—(*Ibid.*, p. 48.)

PROPAGATING MOST EASILY THE WEIGELA ROSEA.

HAVING noticed the question often asked, How to propagate the Weigela? I am induced to give the most ready way I have yet seen by which any quantity of it may be propagated with the utmost ease.

I admit that a most ready way, where at all applicable, is the old method of layering any shoots long enough for that mode; but such length of shoots we all know, where the stock in hand is small, is not at all times commandable.

I would, then, advise that cuttings of the Weigela be put out in precisely the same way, time, and otherwise, as are the

cuttings of Roses, dibbling them in as thickly and as quickly as we generally do the latter; giving them more room the following winter by transplanting, and making more bushy plants by judicious pruning. No plant we are acquainted with is more useful for spring forcing, or under proper treatment blooms more freely—certainly none with less trouble.—W. EARLEY, *Digswell*.

RHODODENDRON SEED, HYBRIDS, AND MANURING.

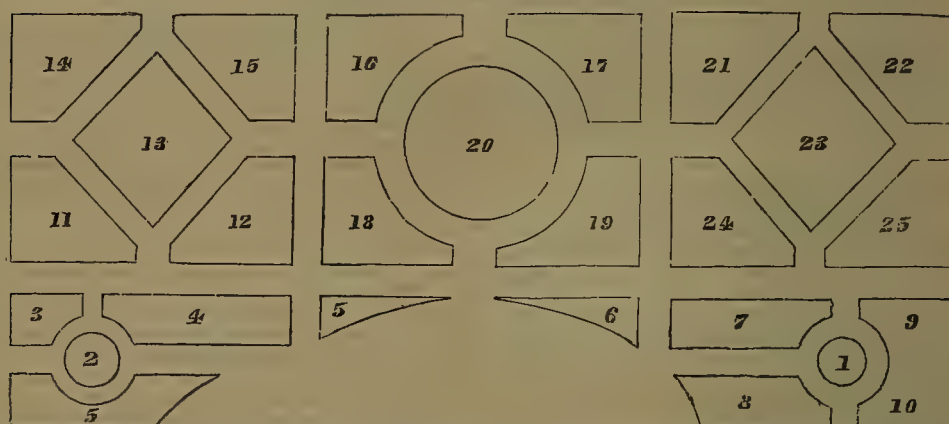
I BEG through you to return my best thanks to "D. C. M." for the paper of Rhododendron seed, from which I shall have much pleasure in raising plants. I presume that they are not seeds of the Sikkim varieties, or even of hybrids from them; but of the hybrid varieties raised between arboreum, ponticum, and catawbiense. Might I venture to ask of your correspondent another question, Whether he has attempted with success crosses between Rhododendrons and Azaleas? I am aware that some hybrids have been raised between the former and Azalea pontica, but has any attempt been made to breed between the Rhododendrons and Azaleas of the indica type, some of which have proved in several situations quite hardy?

I quite agree with "D. C. M." on the question of manure for

Rhododendrons. I habitually apply it to my plants, and with success. I remember one of the foremen at, I think, Messrs. Waterer & Godfrey's gardens telling me that manure was also very beneficial to many of the Pinuses in spite of the common prejudice on the subject. Of course, in this case, as in every other, very much depends upon the character of the soil.

As I am also a lover of spring flowers, I congratulate Mr. Browne on his acquisition of the double blue Periwinkle, which I have never seen. I have plants, or a plant at least, of the double purple variety you name; but I have never prized it in comparison with the blue or white. I fancy this variety is by no means rare; but should it be so, I shall be very glad to impart some of my stock to other amateurs.—J. N. M.

FLOWER-GARDEN PLAN.



1. Geranium Golden Chain, edged with blue Lobelia.
2. Balloon Trellis, covered with small white Rose.
3. Calceolaria Victory.
- 4, 7. Verbena Firefly.
- 5, 6. White.

8. Gazania splendens.
- 9, 10. Geranium Christine.
- 11, 15. Verbena Brilliant de Vaisse.
13. Calceolaria Aurea floribunda, edged with Baron Hugel Geranium.
- 12, 14. Lantana Sellovii.
- 16, 19. Verbena Purple King.

- 17, 18. Verbena Admiral Duncas.
20. Geranium Alma, edged with blue Lobelia.
- 21, 25. Heliotropium peruvianum.
23. Calceolaria Aurea floribunda, edged with crimson Minimum Geranium.
- 22, 24. Geranium Prince of Orange.

WE do not think that you, our correspondent "DIFFIDENCE," have any reason to feel yourself in difficulty. The main body of your geometrical garden consists of three parts—a centre and two wings, or they may be treated as three distinct parts, and yet forming a harmonious whole. This is the system of your proposed planting: Your centre is a circle with four beds round it, square on all the sides, except the inner one swept out by the curve of the circle. The circle you plant with Alma Geranium with a verge of Lobelia speciosa, and in this respect we like your arrangement much better than the Roses of "S. E. L." The four beds round are in cross pairs of Admiral Dundas Verbena and Purple King Verbena. Then each wing is centred with a diamond and surrounded with four figures; the outer lines square and at right angles, the inner line partaking of the character of the lines of the diamond. Both diamonds are filled with Calceolaria Aurea floribunda, and one is edged with Baron Hugel, and the other edged with crimson Minimum Geranium. Thus far the wings are balanced. Of the two Geraniums we think Minimum will be the most telling. The wing on the left-hand side has the four beds round the diamond crossed in pairs, two consisting of Lantana Sellovii and two of Brilliant de Vaisse Verbena; and if the Lantana is on peat and does well, the group will be very nice and come in well with the centre. On the right side the four beds are also crossed in pairs, two beds consisting of Prince of Orange Geranium and two of Heliotropium peruvianum.

This planting may be defended on the principle of having three centres and three different combinations of planting. The centre-and-balanced-wing principle has, however, been kept up so far as the planting of the diamonds is concerned, and therefore we would have liked better if the four beds round the right-side diamond had been planted in colours similar to those on the left-hand side, so as to balance thoroughly. Besides these main features, what constitutes a charm of this garden are five beds clustered on each side, owing to an open semicircular space opposite the circle-centre in the main garden. Now these accessory wings are so nearly balanced on each side, that we would be inclined to do it completely, and balance the main wings also, and use the same materials as you have. The largest beds on these subsidiary wings are Firefly Verbena, which we presume to be a bright scarlet. Very well; take the plants intended for these two beds, and use them in the right wing in the beds marked for Heliotropes, and bring the Heliotropes to the Firefly-beds. Then fill the little circles, Nos. 1 and 2, with Prince of Orange Geranium, and in place of them in the right wing have two crossed beds of pink Verbena or pink Ivy-leaved Geranium, &c., and then move your Golden Chain from No. 1 to the two little beds marked white. This would balance the whole; but we have no doubt the group would look well as you propose. Our opinion, however, is that the change would be more satisfactory.—R. F.

GEOMETRY APPLICABLE TO GARDENING.

NEARLY a century and a half since—namely, in 1718—one of the best practical gardeners of his period, Stephen Switzer, observed, that amongst the several businesses to which mathematics is applied, no where and in no case is it more useful than in laying-out of gardens and large estates. Extensively as the word Geometry is now applied, it was at first no more than the measuring-out, distributing, and fixing the boundaries or enclosures of the large demesnes, and the lesser or more immediate decorations of the noble villas and granges of the most ancient and most polite part of the world.

No change in our style of gardening has occurred since Switzer penned that passage rendering geometry less useful to the gardener. On the contrary, the bedding-out system requiring forms of geometrical figures and proportions; the discoveries relative to light rendering desirable accuracy of angle in the roof of a glazed plant-house; the easy determination of geometric curves in the designing and plotting of walks, roads, and the outlines of plantations; the designing of terraces, levelling, and other work, all falling occasionally upon the gardener as a part of his duty, and which he can only execute with certainty aided by a knowledge of geometry, we adopt this resolution of Switzer.

"I shall then apply what I have here to set down as necessary to be learned by all young surveyors and layers-out of ground, not mixing or confounding it with those many rules and problems that are contained in other books of mathematics, out of which it is not easy for a beginner, nor, indeed, for many gardeners of some standing, to collect what is useful and necessary to be known."

We shall partly republish what Switzer placed before his brethren, but we shall have the whole revised by a superior authority of our own time.

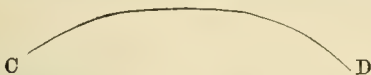
THE DEFINITION OF A LINE.

The line is a length without breadth, made by the motion of a point, and is of several kinds, as it receives difference of motion.

The right or straight line is that which is equally comprised within its extremities, as A B.

A ————— B

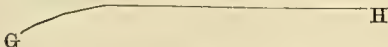
The curved line, is as plainly made from the round motion of a pair of compasses, as C D.



The crooked line is that which turns or wanders from its extremities by one or more turnings-aside, as E F.



The composite or mixed line, is partly crooked, and partly straight, as is the line G H.



The spiral line, called otherwise the volute, is described M N O.



(To be continued.)

VULCANISED INDIARUBBER TUBING.

I HAVE a splendid lot of young trees in my garden, as Plane, Sycamore, Mountain Ash, and such like, for the purpose of forming a shrubbery, and yesterday they were all I could have wished, being very forward and full of leaf; but to-day they are quite changed.

The foliage seems completely ruined and as if burnt by fire. The leaves on the upper surface have turned quite brown, and hang drooping from the bough.

The only way in which I can account for it is this: Last night I had out my indiarubber tubing for the first time this season, and gave all the trees a good watering excepting two, which I remember escaped, as it was nearly dusk when I did it; and now all but those two are in the condition above described.

I should be glad to know that I am mistaken in supposing that the injury was caused by the tubing, as I have gone to great expense in providing sufficient for my garden, and, therefore, I beg to ask you if you can enlighten me on the subject.

I remember noticing the same appearance upon the foliage last year, which I attributed to blight, and grieved I was to lose so many fine young trees. I am now disposed to think that it may have been the tubing and not the blight. The water is supplied from the cistern through a gutta-percha tube.—MOUNTAIN ASH.

ORCHARD-HOUSES—POT-CULTURE OF FRUITS.

EVERY one who happens to be in favour of the culture of fruit under glass will hail with pleasure such emanations as those from the pen of "T. R.," written as they are in a strain of good humour, and with a thorough appreciation of rural sights and sounds mingled with the skill of the horticulturist. The delightful picture he has drawn not only savours of the highest enjoyment, but is highly complimentary to the gardening profession. People of the most strictly sabbatarian views could hardly find fault with it, for there is no need to connect the Sunday contemplation of the contents of an orchard-house or a greenhouse with the necessary work of the week. Although such houses are to me the scene of weekday toil, still I can as agreeably pass the leisure moment in contemplation of the plants and flowers as though they were entirely fresh to me. In this respect I think the gardener possesses an advantage over men of other callings; and such notes as those of "T. R." are likely to confirm this view of the case.

I see no reason to doubt that Mr. Robson is both attached to his profession and a warm advocate of the garden in its utilitarian and decorative aspects, and I think he will not turn a deaf ear to the exhortation of "T. R." if he really see any cause for repentance. But it does not appear to me that Mr. Robson bears any animosity towards orchard-houses, or that he would discourage the practice of having fruit trees under glass. What he seems to imply is, that orchard-houses have as yet failed to realise all that has been promised concerning them; and that, although success is possible, yet failures have been very numerous. But then so they have been in other departments; and in the generality of cases where failures have been traced to their causes, they are found to result rather from the misapplication than the application of the principles on which the system is founded.

It is not a natural condition for any plant or tree to have its roots cramped in a pot, and yet most of the plants in cultivation are brought under that condition; and no one can doubt that however removed from nature that condition may be, there are few plants so treated but what seem to thrive, or, at least, are made to thrive under it; and there are plants which seem better adapted for cultivation in pots than in the ground, or in any bed of earth that could be made for them—as, for instance, many of the Cape Heaths, and other hardwooded hair-rooted plants. We see them grown to a state of the highest perfection it is possible to conceive in pots; but I never yet saw them grown well in a bed of earth—in fact, they appear to me to be so expressly adapted to pot-culture, that no other condition seems to be applicable to them. At any rate, I am not likely to try them by turning them out of pots.

To talk of any particular class of subjects being totally unfitted for pot-culture, is, I believe, contrary to all acknowledged rules, for what plant or tree is there worth cultivating at all that will not submit to have its roots brought within the compass of a pot or tub? Nor are we influenced in any way on this point by the natural habitat of the plant itself, whether it be from the mountain side where it is exposed to bleak winds, or from the low marsh, from the burning plain, or the rocky dell, from the running stream of water, or suspended in the air; we have plants under cultivation in pots which represent all these conditions of humidity and temperature, and all seem to adapt themselves kindly to the circumstance, provided their natural conditions of air, light, heat, moisture, and soil, are afforded. Still, as before mentioned, there are some plants which seem better adapted to pot-culture than others; and while I for one would

rather grow fine-rooted plants, as Cape Heaths, in pots, I should prefer a bed of earth for the Cucumber and the Melon; and though I have known them grown well in pots, yet a bed of earth either in a frame or Cucumber-house, seems to be the best and most natural method, and I certainly prefer it.

Then, with regard to the Pine Apple. Many grow this fruit in beds of soil, dispensing with pots altogether, and say that time and trouble are saved; but whether this is really preferable to pot-culture, there is, I believe, reason to doubt, for those who dispense with pots do not always find the course of Pine-culture run smooth. Then, again, with regard to the Vine: it is natural to suppose that when Vines have a good border to root into, they are more likely to produce a yearly crop of fruit with less labour than if grown in pots. Nevertheless, the pot-cultivation of the Vine has its advantages; and as good Grapes can be grown in pots, and large numbers of Vines are raised every year for the purpose of fruiting in pots, there is no likelihood of the practice being discontinued.

Now, I consider it is just the same with Apples, Pears, Plums, Cherries, &c., as it is with Vines. We naturally look for abundant crops of these fruits from trees cultivated in the usual way, and the principal supply for the markets must certainly be from orchards; but if our orchards never failed to yield their yearly supply of fruit, there would be one advantage in having orchard-houses, and that is for an early supply. But then fruit-culture in the open air is subject to many vicissitudes. The preceding season may have been wet and cold, consequently the wood has failed to ripen; or the blossom-buds are eaten by birds; or the flowers are beaten off by storms of wind, hail, or rain; or if the fruit set, it is eaten when in a green state by grubs, and when ripe by birds. Sometimes the yield happens to be abundant in spite of all these obstacles; but very often the trees are obliged to succumb, and the owner looks in vain for his return. Now, it is just in order to evade all these impediments that orchard-houses are built; and if a suitable border is made, and the trees planted in it, all well and good. They may be kept dry in order to ripen the wood at the proper season, and the buds, blossoms, and fruit, are protected from birds, blighting winds, &c. The chances of obtaining regular and certain crops are therefore increased; but then, many are not satisfied with this, and like to have their trees in a more portable style. They are, therefore, put in pots. In this condition they can be moved about at pleasure. The roots need not be cramped, if the pots only be proportioned to the size of the trees; nor need they be starved for want of nourishment, since it may be supplied to them in the form of liquid manure. If just enough of this is given as the tree requires it, the roots will show no disposition to ramble, even though they may have the chance, in search of nourishment.

That orchard-houses are often failures as regards the supply or the non-supply of fruit is undeniable; but then is it because orchard-houses are altogether on a wrong principle? or is it not rather that in individual cases the trees are not managed on a right one? Among several different collections of potted trees that I have seen, I have failed to distinguish any indication of skilful manipulation. The relative proportions of the pots and the trees seemed to have been totally disregarded. The latter appeared to have been roughly dug out of the ground, bundled into the pot in the most careless manner, and the pot filled to the very brim with the very coarsest soil, then the collar would stand 6 inches above the top of that, and anywhere but in the centre—together when finished the tree having anything but the appearance of a well-balanced pyramid. Why trees should be treated in this way, and then expected to bear fruit and do well, I cannot imagine. The same gardener who treats his orchard-house trees somewhat in this way, behaves very differently towards his flowering plants. These are carefully and neatly potted, the pots being proportioned to the plants as they advance. Why cannot the same treatment be applicable to pot-grown orchard-house trees? Surely the old maxim, that what is worth doing at all is worth doing well, is applicable to these; and I fancy that those who are successful with orchard-house trees, are really as careful with them when young and as they grow up as one would wish to be with the choicest greenhouse plant. And wherein consists the greater claim of the latter to such unremitting attention? A well-grown Azalea or Chorozeema is a beautiful object when in bloom. So is a well-grown Peach or Apple tree even in a pot; but in the case of the latter there is a great advantage, for after the blossom falls the tree is still an object of interest on account of the fruit. When that is ripe

the tree is again an object of beauty not only to the eye, but offers its luscious burthen for the gratification of other senses, particularly that of taste.

No one who has successfully cultivated fruit trees in pots, or ever seen good crops of fruit so cultivated, would ever offer a word in opposition to orchard-houses, unless circumstances should render them altogether superfluous. If Mr. Robson is not particularly favourable towards them, it does not follow of necessity that he should be strenuously opposed to them. In a district so favourable to the cultivation of fruit as Kent, the advantages derivable from orchard-houses may be trifling, that of earliness being the chief, while the time and attention required are increased very much. But there are many districts where the fruit crop is far more uncertain than it is in Kent—where, in fact, some of the more tender kinds seldom produce crops of good size and flavour. It is in such places that the advantages of the orchard-house are seen by contrast, where it is a mere matter of certainty of the in-door in contrast with the uncertainty of the out-door crop, and then the management of orchard-houses and their inmates becomes of double interest. Many are content to cultivate fruit under glass who would not care to cultivate flowers alone, or to build houses for them; and orchard-houses have certainly been a means of stimulating the love of horticulture, and giving it a wider scope than it would have otherwise received.

The question may be asked, What is the successful management of orchard-houses? The amateur who merely amuses himself with a small house and a few trees, is delighted if two-thirds of them bear fruit in one season, and is content with one-twentieth part of the fruit that might be produced on a tree covering the same space as his orchard-house. This is not the case with the practical gardener; he is content with nothing short of the same amount of fruit, or even more than would be produced on the same surface, supposing it were covered with healthy bearing standards, the earliness and greater certitude of obtaining regular crops being considered equivalent return for the necessary outlay.

If regular and early crops are to be obtained by means of orchard-houses, then certainly these advantages are indisputable; but how is that regularity of bearing to be arrived at? and this, probably, is just what amateurs would like to know. Well, it just amounts to this: Induce your trees to make fruit-bearing wood, and when it is made, harden it and ripen it well. The former is to be done by encouraging a kindly root-action during the growing season; a proper heat and humidity both at top and bottom will do this, and everybody knows what fruit-bearing wood is when they see it. To ripen the wood retard root-action, but not suddenly, by keeping the roots cool and dry, and well expose the wood as much as possible to the sun. On these points success mainly depends. The next in importance is, I consider, to let the fresh air have free access to them, and let them break gradually, so that the new growth is strong and healthy. Many trees drop their buds and first leaves from being started too hastily by being kept close. There are other essential points, as giving them suitable soil, repotting when the wood is ripened, thinning the fruit and the young shoots, &c.; but if amateurs would give proper attention to making and ripening the wood, their trees would be productive, and there would be few complaints of failure.

Experienced growers are in the habit of discussing technicalities, taking the main points for granted. The inexperienced amateur catches at these minor matters, and follows them to the letter. He measures to an inch the size of the pots, to a day the time of potting, also to an ounce the proportions of loam and dung of which the soil is composed, or is very particular about washing off the blossoms when the fruit is set, if it should set, and other small matters which come naturally enough in their season; but that plodding, untiring watchfulness on which success depends is not to be thought of, so that the trees receive only a fair share of attention when they are most attractive. To the ordinary observer success in any particular branch of horticulture speaks of cleverness and skilful handling; but to the gardener it also indicates hard, plodding industry, and a watchfulness that in any branch of industry would not fail to bring success.

This brings me to a point in "T. R.'s" letter which appears to reflect on the customary practice of exhibiting specimens of horticultural skill, which is certainly done by the majority of exhibitors with the view of taking prizes. Doubtless the reflections of a man of genius differ widely from those of the mere prize-

taker; but does it follow that every exhibitor is a mere prizetaker? What I have experienced in the way of exhibiting has been only as a subordinate—that is, I have merely assisted in growing the plants, taking them to the shows, &c.; and it is nearly a dozen years ago since I had anything to do with shows, so that I cannot conscientiously have much to say concerning them. I have formed opinions averse to showing, because I have known those who have made it a profitable trade and who regarded their plants merely as objects for obtaining prize-money, and who would deny that any plants were worth growing for which prizes were not offered. But then it is not fair to assume that these are the views of all but a very small proportion of exhibitors. I believe that in the majority of cases it is from a laudable desire to show what can be done by perseverance and knowledge; and that while some real and tangible momentum is given as acknowledgment of various degrees of excellence, by far the most gratifying result is the fame thus obtained.

Apart from the motives that actuate exhibitors, it is unquestionable that horticultural shows have done more than anything else to bring gardening to its present high position. They have given rise to competition, and stimulated men to endeavour to excel each other in producing specimens of superior skill in that useful and decorative art which is ever progressive. —F. CHITTY.

THE VAN MONS THEORY OF FRUIT-RAISING.

EXPERIMENTS IN ILLINOIS.

THE following facts have been elicited from correspondence with H. P. Brayshaw, of DuQuoin, Illinois. The experiments were instituted by his father many years ago to test the truth of the so-called Van Mons theory of the improvement of fruits by using only the first seeds.

Mr. Brayshaw quotes from memory chiefly, having kept no record. Thirty-five years ago, in 1827, his father procured twenty-five seedling trees from a nursery, which may be supposed to have been an average lot grown from promiscuous seed. These were planted, and when they came into bearing, six of them furnished fruit that might be called "good," and of these "four were considered fine." One of the six is still in cultivation, and known as the Illinois Greening. Of the remainder of the trees, some of the fruits were fair, and the rest were worthless, and have disappeared.

Second Generation.—The first fruits of these trees were selected, and the seeds were sown. Of the resulting crop, some furnished fruit that was "good," but they do not appear to have merited much attention.

Third Generation.—From first seeds of the above one hundred trees were produced, some of which were good fruit, and some "even fine," while some were very poor, "four or five only merited attention." So that we see there was a retrogression from the random seedlings, furnishing 25 per cent. of good fruit, to 4 or 5 per cent. in the third generation that were worthy of note.

Fourth Generation.—A crop of first seed was again sown, producing a fourth generation; of these many were "good culinary fruits," none, or "very few being of the poorest class of seedlings;" none of them, however, were fine enough "for the dessert."

Fifth Generation.—This crop of seedlings was destroyed by the cut-worms, so that only one tree now remains, but it has not yet fruited. But Mr. Brayshaw appears to feel hopeful of the results, and promises to continue the experiment.

Second crops have also been sown from some of these trees, but a smaller proportion of the seedlings thus produced were good fruits than when the first seeds were used—this Mr. Brayshaw considers confirmatory evidence of the theory, though he appears to feel confidence in the varieties already in use, most of which have had almost an accidental origin.

He thinks the result would have been more successful had the blossoms been protected from impregnation by other trees, and recommends that those to be experimented with should be planted at a distance from orchards so as to avoid this cross-breeding, and to allow of what is called breeding in-and-in. If this were done he feels confident that "the seedlings would more nearly resemble the parent, and to a certain extent would manifest the tendency to improvement; and that from the earliest-ripened fruits, some earlier varieties would be produced; from those latest ripening, later varieties; from those that were

inferior and insipid poor sorts would spring; and that from the very best and most perfect fruits we might expect one in one thousand, or one-tenth of 1 per cent. to be better than the parent." This diminishes our chances for improvement to a beautifully fine point upon which to hang our hopes of the result of many generations of seedlings occupying more than a lifetime of experiments.

Mr. Brayshaw, citing some of the generally adopted axioms of breeders of animals, assumes that crosses as of distinct races will not be so likely to produce good results as a system of breeding in-and-in persistently carried out. This plan he recommends, and alludes to the Quince and Mulberry as suitable species to operate upon, because in them there are finer varieties, and therefore less liability to cross-breeding, and a better opportunity for breeding in-and-in. He also reminds us of the happy results which follow the careful selection of the best specimens in garden flowers and vegetables, combined with the rejection of all inferior plants, when we desire to improve the character of our garden products; and he adopts the views of certain physiologists, which, however, are questioned by other authorities to the effect that violent or decided crosses are always followed by depreciation and deterioration in the offspring.

The whole communication referring to these experiments, which are almost the only ones, so far as I know, which have been conducted in this country to any extent to verify or controvert the Van Mons theory, is very interesting; but it is easy to perceive that the writer, though apparently very fair and entirely honest, has been fully imbued with the truth and correctness of the proposition of Van Mons, that the first ripened seed of a natural plant was more likely to produce an improved variety, and that this tendency to improvement would ever increase and be most prominent in the first ripened seeds of successive generations grown from it.

The theory of Van Mons I shall not attempt in this place to controvert, but will simply say that nothing which has yet come under my observation has had a tendency to make me convert to the avowed views of that great Belgian pomologist; while, on the contrary, the rumours of his opponents, that he was really attempting to produce crosses from some of the best fruits, as our gardeners have most successfully done in numerous instances in the beautiful flowers and delicious vegetables of modern horticulture, have always impressed me with a colour of probability, and if he were not actually and intentionally impregnating the blossoms with pollen of the better varieties, natural causes, such as the moving currents of air, and the ever active insects, whose special function in many instances appears to be the conveyance of pollen, would necessarily cause an admixture, which in a promiscuous collection, like the "school of Van Mons," would at least have an equal chance of producing an improvement in some of the resulting seeds.

The whole subject of variation in species, the existence of varieties, and also of sports which may perhaps be considered as still more temporary variations from the originals than those which come through the seeds, is one of deep interest well worthy of our study, but concerning which we must confess ourselves as yet quite ignorant; and our best botanists do not agree even as to the specific distinctions that have been set-up as characters of some of our familiar plants, the most eminent authors differing with regard to the species of some of our most familiar genera of trees and plants.—*From a paper by Dr. J. A. Warder, read before the St. Louis Horticultural Society.*—(Prairie Farmer.)

DISTRESSED LANCASHIRE WORKINGMEN BOTANISTS.

ALLOW me to thank your numerous readers for their kindness in sending me the means to help some of England's worthiest sons and daughters, in spite of the bad name we have through the late unfortunate riots.

I am happy to say that the older operatives were thoroughly disgusted with the hubbub that was kicked up by some foolish lads and lasses; yet owing to those riots I never expected to receive another penny for my little flock.

I am happy to say, however, that the kind-hearted Lady Nevill has sent me her usual donation of £1, and H. B., 2s. 6d. I also omitted 2s. I had received for six cuttings of "Little Dot." —JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHERE Broccoli and Winter Greens are coming off, the ground should be deeply trenched, the stems being laid at the bottom and quicklime strewed over them; also, if the ground is intended to be again planted with any of the Brassica tribe, it should have some manure incorporated with it, but it is best at all times to change the crops as far as practicable. *Capsicums*, repot the plants of the larger varieties intended for turning out next month. Harden them off when they have taken fresh root-hold. The small sort generally called *Chilias*, should also be potted in rich soil as they require, and to be kept in a stove or warm house. *Carrots*, the frames may be removed from the early-sowing if required for other purposes; thin and water them when necessary. *Cauliflowers*, keep the ground well moved about them, and also about the Cabbages, and lose no opportunity of destroying slugs. *Celery*, some of the earliest-sowing that has been pricked into boxes may now be planted in a frame. No artificial heat is required; but the lights should remain on in cold wet weather. Prick out the successional sowings. *Dwarf Kidney Beans*, sow on a warm sheltered border; also, a few Scarlet Runners and Haricot Beans, but these succeed so well transplanted that it is best to provide for contingencies by sowing them in pots or boxes, and germinating them under glass. When well up remove them to the open air, and cover at night, and transplant them about the beginning of the second week in May. They will come into bearing more than a week before those sown in the open ground, and will continue to bear quite as long; add to this the certainty of a crop, and the facility of protecting them in the earlier stages when they are so apt to be nipped by the spring frosts. *Lettuce*, forward the spring-sown plants where there is a scarcity of autumn-sown ones. Water them in dry weather and keep the soil loose about them. Sow seed of the Black-seeded, Bath, and Paris Cos. *Onions*, thin out the autumn-sowing. The plants drawn out may be replanted into beds. After they are thinned-out to regular distances loosen the soil between them. *Peas*, earth-up and stick the advancing crops. Before earthing use soot for the purposes we have before recommended. *Radishes*, make a sowing of Turnip-rooted kinds; water those in frames when dry, to preserve their tender and mild qualities. *Red Beet*, sow a full crop towards the end of the week. *New Zealand Spinach* may be sown in heat for transplanting in May; and Vegetable Marrows and the Ice Plant where the latter is required for garnishing.

FLOWER GARDEN.

Attend to the pruning of evergreen shrubs. Remove all dead branches. Hoe, rake, and stir the surface of flower-borders, and remove all decayed leaves and stalks of plants which have done flowering. Thin out early-sown annuals in open borders to from four to six plants in each patch. Give standard and dwarf Roses a good soaking with manure water, which will excite vigorous growth and insure an abundant bloom. Autumnal-flowering Roses, especially, delight in such treatment. Put out alpine plants on rockwork. Shade *Auriculas* coming into bloom. Pot *Carnations* and *Picotees* for blooming, and protect from heavy rains. Plant out *Pinks* if not done. Make new beds of *Pansies*, and propagate from side suckers under hand-glasses, shading them until rooted. Plant out beds of *Stocks*, and sow German and other sorts for autumn-blooming. Continue to propagate *Dahlias*, and shift those previously struck, giving air freely to prevent drawing. Divide and pot *Lobelias*, and start them in heat.

FRUIT GARDEN.

All trees on walls should now be looked over, and have their wood thinned while in the bud, taking-off with the finger and thumb all foreright buds, and others that are not properly situated for laying-in. Thin also the young canes of *Raspberries* to the number necessary for next year's crop. By this means the canes will be stronger and ripen better. Also remove all the foreright shoots from *Apricot* trees, and a portion of the side shoots; but endeavour to distinguish those which are likely to form short fruit-bearing spurs, which must always be left.

GREENHOUSE AND CONSERVATORY.

Repot growing plants as may be necessary. Regularly shift tender annuals, stake them, and give water in large quantities as they advance, using liquid manure to the strong-growing kinds. Forward *Calceolarias* and *Cinerarias*, and keep them clear of insects. Water *Camellias* freely with weak manure water, but do not let the water hang about their roots; keep the shifted

ones close and warm. Heaths and New Holland plants to have abundance of air, and to be watered very carefully. Shift *Pelargoniums* wanted to flower in autumn, and propagate desirable sorts. Keep all climbers, whether in pots or otherwise, regularly trained. Keep the conservatory as cool by day as is consistent with the health of the inmates. This will keep the plants longer in bloom, and be more enjoyable for parties inspecting them. Shading must be resorted to in this bright weather.

STOVE.

Give a final shift to the early-flowering *Achimenes*, *Clerodendrons*, *Gloriosas*, *Geaneras*, *Begonias*, &c., and keep them close for awhile, and water free-growing plants generally with weak manure water. The last succession of *Achimenes*, to flower late in the season, should now be placed in heat. Employ pans or broad shallow pots for their general cultivation, and as they require an abundant supply of moisture when they are in flower, let the drainage be as efficient as possible in order that they may be freely watered without stagnating and souring the soil. *Oreohids* are now progressing fast, and will require attention in shading daily and gradually increasing the humidity of the house, so as to keep pace with the increase of solar light and heat. If the roof is covered with the creepers a little management in training them, to effect a judicious shading of the plants beneath, will save much trouble with external shading, which will only be needed on very bright days, and add much to the appearance of the house.

PITS AND FRAMES.

Clear out some of the hardier bedding-out plants which have been under glass during winter, place them in some sheltered situation, and where they can be readily protected in case of frost or cold cutting winds. This will make room for some of the young stuff potted-off some weeks ago. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

STAKING Peas, manure-watering Broccoli, Cabbage, &c., turning and banking-up linings of Cucumber-beds, liming Radishes, Turnips, &c., and taking lots of the Greens tribe to the rubbish-heap, as we do not want to make a disagreeable smoke with charring just now, and when covered over with rough earth the stalks and tops will be good compost before the middle of the winter. Threw dung, leaves, &c., together for a small fermenting-heap, and after this begin to be more independent of dung for artificial heat, as the mowings from the lawn come in, as these can be made to give a good heat for temporary purposes. General work much the same as the last and previous weeks.

FRUIT GARDEN.

Turned out all the Strawberry plants done fruiting, and planted them for autumn and next year. Thinned Grapes. Average temperature 60° at night, and 75° to 85° during the day when the sun shines. Second viney coming strong at a lower temperature; will regulate it as soon as possible, as all the rods are not yet in their places, as we were obliged to bend some to cause them to break regularly. Late viney has all the wood close to the front of the house, and is kept as airy and cool as possible; but we have not been able to keep it from breaking, so that we shall have to tie up to prevent rubbing off young shoots and fruit, though to all appearance there will be plenty of the latter to spare. We should like to keep them quiet as much as possible for some time yet, so that the flowering would come on in the hot weather, as after that time there should be less of anything like a check; and if this simple principle is kept in view, amateurs may have pretty early Grapes in autumn with the smallest expenditure from the coalheap. The shutting-in the sun's rays is the best of all heat; and the economist's motto, with a combination of safety, should be, "Give air early in the morning, and take it away early in the afternoon." If coal is no object leave air on constantly, but a rather close atmosphere at night is less dangerous if air is given early in the morning; and small openings soon change the atmosphere of a house. Nipped the shoots of Figs when necessary, making sure of some stumpy pieces to stand over the autumn, and watered them at the roots, the crops being extra heavy. Thinned out any shoots to spare in the Peach-house, and must thin the Strawberry-pots on shelves ere long, as they tend to darken the house too much. Laid out Melon-runners on the plan described last season. Sowed a few more for late crops, having plenty in good-sized pots to turn out as soon as room can be obtained, and had

another clearing at the trees in the orchard-house, having had an extra supply of the brown or black beetle, the larvæ of the *Aphis Persicæ*, last Sunday.

Aphis Persicæ.—We are sorry that "X. Y. Z." has this pest in his orchard-house—at least we judge it to be so from his description, and still more sorry that smoking with tobacco, dusting with snuff, hellebore, &c., seem to have no effect upon it. That is contrary to our experience. The pest is easily killed if you catch it, and do not mind the appearance it gives to your fingers. We have never found it to stand a good smoking, nor dusting, or other modes; but then, though you kill all you see, and you think you have conquered him, lo and behold, the story of the Phoenix is a trifle to this beetle, as, if you leave a single one in hole or cranny, in the soil of the pot, or running round on the outside of it, you will not have to wait long until you have your thousands, or it may be millions, to again slaughter and destroy. We are also a little more unfortunate than "X. Y. Z.," as we have had the experience of last season as well as the present, and we believe it must have come to the place by some Peach plant or other, and heartily will we wish it good-bye when it takes its departure. In close houses where smoking can be resorted to, that we believe is the best mode for settling the plague. In a very close place, and where only a few plants are infested, bruised laurel leaves put in the place will not leave a single one alive. In an open orchard-house neither of these modes can be resorted to with anything like economy, unless either the whole house is covered, or individual trees are covered-in with a cloth which will keep in the smoke. In such a case, washings, and syringings, and dustings with powder are chiefly to be depended on; but nothing will do but constant watchfulness and perseverance, and with these the pest, if not thoroughly eradicated, will be kept down so as to be harmless; but the great thing is to be at him whenever he shows himself.

Besides this letter of "X. Y. Z.," we have several other letters complaining still more bitterly, and we fear if the pest becomes common it will give work enough. Most of these tell us the separate washes that have been used, such as old-fashioned clay, tobacco juice, sulphur, lime, and soft soap, Parmentier, Gishurst, 3 ozs., some more and some less to the gallon; and yet with all that trouble there is the enemy in black phalanxes ready to dispute the ground with them. We are sure a short article on the natural history of the insect, and some hints as to its destruction, would be useful. Although we have already given an outline of the treatment of these pests, we think we may shortly repeat it in order that it may be supplemented.

About this time last year the insects made their appearance; but they were kept down, and towards the autumn we could scarcely find a trace of them. To make assurance doubly sure, as soon as the leaves were falling we burnt sulphur in the house, thinking the fumes would kill everything alive and search into every hole and cranny. This killed some green points of shoots, which we expected, as we have long known that sulphur-burning will kill everything soft and green, but that it will have no effect on the buds of well-ripened wood if used in moderation. After this, when all the leaves, &c., were removed, several times during the winter the trees were well syringed with soap water as hot as the man could bear to use it with a cloth round the syringe. Then the trees were all washed with a brush and soap and water. The surface soil to the depth of $1\frac{1}{2}$ inch was carefully taken off, and afterwards the floor was watered with water not far from boiling, and in a few days stirred up and covered with fresh soil; then the trees were painted some time about Christmas, Gishurst, clay, and sulphur forming the paint, and working it well into every hole and joint and sluicing it among the buds, which were thus sealed up so far from the air for several months in the winter. One would imagine that such a doctoring would have found out every live insect, and most likely it did; but then we doubt if even very hot water will kill the vitality of eggs, and there is no doubt that, though these pests are produced in viviparous fashion, like ropes of onions in summer, shoals of eggs are laid in autumn, so that they may escape the casualties which would destroy the larvæ in winter. The whole of our washes, when trees are in a dormant state, have proceeded on the principle of sealing-up the eggs from air, and have, no doubt, thus done good; but until there is enough of heat to bring the principle of vitality into action, it is doubtful if the eggs are not as safe without air as with it, and the expanding of the buds will so cause the coating matter to crack that air will thus find its way to an egg if any such should be left. On this account, in some cases we have found a thin solution of glue one of the

most complete settlers for insects. Be this as it may, we saw no trace of our enemy until the buds and shoots were expanding, and, of course, a good portion of the paint in which they were enveloped had dropped off. Of course, the pest was attacked as duly reported.

On the trees we noticed two or three shoots rather bad on last Friday week; these were either removed or cleaned. On Monday these trees had a dingy black appearance, so thick were the insects scattered on the leaves and shoots. A decoction of tobacco-water and Gishurst and soft brushes were used, making sure that the wash was strong enough to settle the insects if it touched them, and not so strong as to injure the foliage. In washing, the hand was held as much as possible below the affected part to prevent the pests from dropping. Some, however, would do so, and as the work proceeded the ground was syringed with hot water. On Tuesday evening the trees were syringed heavily all over with laurel tea water in a clear state, being passed through a cloth, and the water heated to about 130° , the fruit being as much set as we believed rendered them free from danger. With water at this temperature, we have cleared away myriads of green fly; but, of course, it must not be so hot as to injure the plants. On close examination on Wednesday, among myriads of slain there were a few solitary specimens to be found in a sickly state, so at night another heavy syringing was given with clear sulphur-lime water at about the above temperature. This strong acid water is thus made:—One pound of flowers of sulphur and $1\frac{1}{4}$ lb. of quicklime are boiled half an hour in a gallon of water, say nearer five quarts. This when settled is as clear as sherry, and a quart of it was used for a barrel of thirty-six gallons of water, and that is pretty strong.

To-day (Thursday) we have not seen one alive, and to-night we will give another good syringing with clear water, and continue sprinkling as wanted. In such cases we would rather vary the means used than otherwise. We have more faith in perseverance, the use of the fingers, and constant watchfulness than in any one nostrum as a cure-all or kill-all in these matters. It is not seldom that we have seen men's names appended as testamentary evidence to the efficacy of certain mixtures in eradicating all sorts of insect enemies, and yet you could not walk through their houses without having your clothes encrusted with filthy insects that, of course, you never expected to find there. In close houses tobacco-smoking, with or without a few laurel leaves or capsicums mixed with it to make it more pungent, with the assistance of the syringe, we have no doubt will at last conquer this pest; but then the expense in large houses will be a consideration, and frequent applications will be necessary in order that too strong a dose may not injure the plants or bring the fruit rattling on the floor.

ORNAMENTAL DEPARTMENT.

Conservatory.—Re-arranged this, taking out lots of Chinese Primroses and Cinerarias; moving Azaleas in bloom more to the back to be slightly shaded, taking Pelargoniums to the front where they will have plenty of light, and placing lots of Cinerarias in bloom nearer the back, where they will be slightly shaded. When convenient, Cinerarias and Calceolarias will do better if set on damp moss, or if in saucers if the saucers are filled with moss. Next to freedom from frost, moisture and coolness are the great essentials of success and freedom from insects.

Potting.—*Camellia-buds Dropping*.—Many complaints have appeared during the season of Camellias dropping their buds, and in almost every instance we should be inclined to say that it arose from dryness at the roots, even though watering was given in the most systematic manner. In moving some Camellias from the conservatory to a vinery there were several that had not the right appearance, and the flowers were smaller than they ought to have been: we attributed it to dryness in the ball, and yet when the pot was well thumped with the knuckles it emitted a dull sound, as much as to say there is plenty of moisture there. Still the weight of the pot convinced us that the ball could not be wet enough. On turning the balls out of the pot we found this to be the case. No water had penetrated the centre for many a long day, never much from the time they had been last shifted. There are two little matters that young gardeners are difficult to be convinced upon—the first is, that young tender plants can be injured by taking them to a cold shed, shifting them in cold soil, and leaving them there an hour or two in the cold before taking them back to their warm place. The second is, the importance and necessity that every plant should be well

watered an hour or two before it is shifted into a larger pot, and more especially if the ball of the plant is but slightly broken or merely a little ruffled at the sides to let the roots out freely. Ever and anon men will be sure to stick dry balls into larger and fresh pots, and no amount of watering will ever saturate them afterwards. The water will pass through the fresh soil, avoiding the dry ball as if it were rolling from a cabbage-leaf or trickling from the wing of a duck. The only modes of moistening in such circumstances are either boring holes with wires in the ball, and filling these with water, or setting the pot overhead for half an hour in a tub of water. These Camellias we probed and brought out the dry dust from the centre of the ball to show there was no mistake in the matter, and before repotting them the ball was scoused overhead for a couple of hours in chilled water about 80°, and then allowed to drain before repotting. When any danger in this respect is apprehended the soil should not only be well firmed, but that next the pot should be rather the highest, to send the water over the bulk of the ball. We would advise in the case of all plants that throw their buds, or do not please in the flowering, that they should be examined in this respect, and care taken that the main part of the ball is not dry. There is just another fertile source of Camellias casting their buds, and that is the pots being cooled much by frost before the plants are housed. The roots are much more easily injured when expanded in a pot than when planted out.

FRESH SOIL.

We have potted-off a good number of Golden Chain Geraniums spring-struck, as we think that small young plants produce the best foliage. There is something rather tender in this still-general favourite. This winter our general stock has been kept in rather a low temperature. To have them nice they should rarely be below 45° in winter. They did not look so nice as we wished, or, being mostly in 60 and 48-pots, we would have turned the older plants into trenches with a piece of calico over them. On examination the plants seemed to have made few roots; and the soil being about them all the winter, it was not likely that it would be so sweet as to entice them to do so. Our intended treatment, therefore, was altered. A slight hotbed was made, chiefly of tree leaves. The plants were shaken free of the old soil, and replaced again in small pots in light soil, consisting of equal parts loam, leaf mould, peat, and sand, and plunged in a mild heat. In less than a week the fine white roots are getting to the sides of the pot, the leaves are increasing in size and yellowness, and in a fortnight they will stand anywhere and be fit to go out, and we feel confident in a favourable season they will do well. We are just as sure, that if kept in the pots in which they had been too much starved in winter, and in which the soil, owing to that coolness, had been slightly soured, the plants would have done little good until the ground had got warm in summer, and perhaps not even then. Most likely, too, they would have been as deficient in rich yellow as those mentioned by a correspondent the other week. This repotting, and a hitch on for a fortnight, will make them all that we wish—at least we hope so.

BEDDING PLANTS.

We have gone beyond limits; but we crave a few lines more, so that no mistake may be made, as it seems some misapprehension exists as to planting-out into temporary beds, which is a most economical plan where glass room is scarce, and would be advisable as a saving of labour up to the beginning of April, and putting the plants out singly. To amateurs, however, who either can pot singly or keep all they have in pots, we would advise them to do so after the middle of April is past. We have no glass for bedding plants, except what we use for other crops; and as we never think of potting a twentieth part, the earth-pit and the Celery-trench are our resorts after March, turning out the hardiest first. One fine feature of this system is, that instead of watering once a-day, once a-fortnight or once a-month is nearer the mark; and when the plants are to be moved short distances, we actually think the plants carefully lifted do better than when cramped in pots. After this 16th day of April, however, we would plant singly only such plants as form nice fibry roots. For instance: on a north border to-day we have pricked out a good many hundreds of the double white *Feverfew*, *grandiflora*, which is very hardy, but we like young plants best; and we cannot plant it out where it is wanted until we do so with *Ageratum* and Scarlet *Geraniums*, &c., when these plants will lift with nice balls singly. But now

after this time, unless we could give glass protection and a little help beneath the roots, we would not single out in a bed pots full of rooted cuttings of *Verbenas* or *Geraniums*, as they would receive a check, and would scarcely get well established in time. For all such things, however, we need the room they occupy, and most likely will need the pots several times over: and therefore, though it was only for a fortnight or a month we would turn them out into rough lumpy soil of which leaf mould formed a part, breaking the ball of the cluster of plants little or nothing. By this mode the fresh roots keep near home, the plants grow on without check, and a very little care at planting time enables you to divide the mass and plant separately; and individually they will suffer the moving but little. When obliged to economise room, means, labour-power, and command of water, many shifts must be resorted to; and the plan of turning out at this time lots of struck things just as they are is one of the best for us. Had we plenty of room under glass and pots, most likely we would pot a good many separately.—R. F.

TRADE CATALOGUES RECEIVED.

C. Turner, Slough. *General Spring Catalogue of Florists' Flowers, Bedding Plants, &c.*

Lucombe, Pince, & Co., Exeter. *Descriptive Catalogue of Roses, Softwooded Bedding Plants, &c., 1863.*

J. Scott, Merriott Nurseries, Crewkerne. *Descriptive Catalogue of Bedding Plants.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

AMERICAN GOOSEBERRY (*W. Chinnick*).—It is the Cape Gooseberry, *Physalis edulis*. The postage stamps were received.

CURRENT-BRANCH GRUB (*J. T. Jones*).—This is not at all an uncommon assailant. It is the larva of the Currant Sphinx (*Trochilus tipuliforme*). Not only the extremity but the entirety of a branch is destroyed by the grub eating the pith throughout its length. The brown grains are not eggs, but excrements. The parent moth, not the grub, lays the eggs.

LYCOPODIUMS (*M. H. K.*).—There is a work devoted to Lycopodiums.

AUSTRALIAN FLORA (*Tasman*).—A work on this Flora is announced by Mr. Lovell Reeve as about to be published, the author being Mr. Bentham, President of the Linnæan Society.

STOVE FERNS, &c. (*P. H. G.*).—The work is now printing. The plates are very numerous, and require great care. You can obtain the *Ailanthus* Silkworm eggs by writing to Lady Dorothy Nevill, Dangstein, Petersfield, Hants. The fronds of the Gold and Silver Ferns must not be sprinkled with water at all.

VENTILATING-PANE (*S. M., Bacup*).—There is no difficulty if a projecting lap of lead is fixed on the rafter over the upper half of the pane, and a similar flap is fixed on the lower half of the pane.

HAIRPINS FOR PEGGING PLANTS (*B.*).—If you require a large quantity, you had better apply to some wholesale house at Birmingham.

OXLIP (*J. W.*).—Whether it be an Oxlip or Polyanthus we cannot tell from seeing merely a truss of the flowers. Whichever it is, the limb of the corolla is larger, deeper in colour, and more sweet than any we remember.

CALADIUM ZEBRINUM (*W. W. W.*).—We conclude that the plant you have under this name is *Alocasia zebrina*. If so it requires stove culture, is a native of the Philippine Islands, and was imported last year by Messrs. Veitch.

PEAT SOIL (*H. B.*).—If you live near London, apply to Mr. Kennard, Swan Place, Old Kent Road. If at a distance and you require a quantity by rail, apply to Mr. Short, Reigate Heath, Surrey. You will see their advertisements in our Journal last week.

DWARF YELLOW CALCEOLARIA AND GERANIUMS FOR CHAIN-BORDER (*A Midland County*).—We have not seen any *Calceolaria* we like better than *C. Aurea floribunda*. The dwarfest Scarlet *Geranium* we have is *Little David*. One of the prettiest variegated varieties is *Queen's Favourite*. Dandy is the dwarfest, but it is a poor thing. Golden Chain is perhaps as good as any—certainly it is better than *Golden Fleece*. The white-edged class are so numerous that it is no easy matter to particularise. Countess of Warwick is admired by some, but we like *Jane*, *Bijou*, and *Alma* quite as much.

April 21, 1863.]

PROPAGATING FICUS ELASTICA, &c. (A Reader).—By cutting down a plant and cutting up the shoots into lengths of two eyes each, one to be under the sandy soil of the pot and the other above it, and keeping the cutting-pots in a warm frame, they will doubtless all strike. *Iberis corifolia* and dwarf *Cistus* may be both struck from cuttings in like manner if the cuttings were taken off when the young shoots are about 3 inches long. *Linum grandiflorum coccineum* comes best from seed.

PERTWINKLE (Garnons Gardens).—Not the same. Yours is purple, the other is double blue.

IVY PRUNING (J. S. Chorley).—Never clip Ivy; the cut leaves become brown and disfigure the plants. Have the shoots shortened-in as needed by the aid of a pruning-knife. Now is the best time for the operation.

POINSETTIA PULCHERRIMA PROPAGATING (A Subscriber).—Cuttings of two joints, one joint in the ground and one out; will strike freely in a hotbed, and the best time we have tried them is the end of July, as the plants then, and not get so leggy as they do when put in earlier. Keep them warm all through the growing season, and it is only after the crimson head is formed that the plant may be treated as a greenhouse one.

FIGS FALLING-OFF (A Subscriber).—Most likely your Fig trees in pots, standing, as you say, under the shade of Peach trees, either lack the necessary sun required to perfect the functions of impregnation, which in the Fig is different from that of other fruits; or, if the plants may have at any time lacked water, the same result will follow. Your remedy with the succeeding crop lies in trying to avoid these evils. Hard forcing at the particular time that impregnation is going on is fatal to the Fig; but the economy of the plant is wrapped in more mystery than that of most others. We may also say that in the growing season abundance of water is wanted, and neglect of this will occasion the falling-off you complain of.

PEACHES NOT SETTING (A Six-years Subscriber).—We can see no cause, unless extra dryness in winter and extra soaking when coming into bloom, which will frequently make the buds drop. From what you state, however, we incline to think that the trees were over-luxuriant and the wood not thoroughly ripened. We have had much the same happen with an Apricot tree. It was lifted two years ago; but last year the wood was vigorous, though not over-strong. When cutting it this spring we foretold the bloom-buds would do no good, and almost every one has fallen. There was no strength in them, for though large and flourishing in appearance, their attachment to the branch was very slender, and in most cases the germ or young fruit was wanting. We would advise you to pinch the wood more this season, and in September either lift and replant or root-prune, so as to secure more thorough hardening of the wood.

PROPAGATING-HOUSE (J. F.).—A place 7 or 8 feet wide and 40 in length, or say 10 feet wide and 30 long, would suit you. Now, this might either be a lean-to or a span, and both would be economical according to your material. If you had bricks, the cheapest would be—wall at back 8 feet, in front 4 feet, fixed roof, ventilators back and front. For bedding plants strike everything in autumn, and you would need merely a small flue to exclude frost. If you want to propagate in spring, perhaps it would be best to have hot water all round for top heat and below one bed at least for bottom heat. If we knew more of your needs and the materials at disposal, we might advise better.

DESTROYING SLUGS AND WORMS—PINE LEAVES DECAYING (A This-years Subscriber).—In the garden in the open places you might use a dusting of malt, enough just to whiten the ground, but a good liming would be the best remedy. Watering the lawn with clear lime-water would be the best and safest remedy. We think the brown spots on your Pine Apple leaves either have been caused by bruises by tying-up, or they have had a check of extra cold or damp, or both, in winter.

PLANTS FROM CEYLON (S. A.).—You can neither have the *Anæctochilus* nor the bulbs from Ceylon and Sumatra without trouble. We should be doubtful of the *Anæctochilus* unless taken up carefully and packed in a thick-glassed Wardian case and carefully attended to on the passage. The bulbs, too, must either be sent home with balls growing, or, what would be much better, marked where they grow and taken up when in a dormant state, in which condition they would come with least trouble. The more at rest the *Anæctochilus* are the safer will they come, but without care on the passage we should imagine there would be little chance of their doing much good afterwards.

LOBELIA KERMESINA—BEDDING-OUT (Q. Q.).—This *Lobelia* is generally stronger-growing than *Lobelia speciosa* true. It will do well for pin cushion beds, either with Golden Chain or Cloth of Gold, or even such white variegated ones as *Manglesii*, *Bijou*, *Alma*, &c. See what Mr. Fish said last week about pricking-out struck bedding plants in temporary beds. All autumn-struck are better for being pricked out separately. It is amazing what a difference the fresh soil does. After the middle and end of April Mr. Fish prefers turning out into such beds cuttings struck in pots just in lumps instead of singly. They thus receive less check, grow freely, and can be divided at planting with less care and trouble than by any other mode. If you could pit them, keep them under glass, and give every encouragement, of course, that would be better than planting-out under a rough protection, but then that suits the amateur who wants a few hundreds. Were some of us to do so we would need a Kelso for ourselves and a good village of glass houses. Much of your success, too, will depend on what your Vine shutter is. If it is board or thick canvass, we can account for its not answering—it would not be near so good as a piece of calico. If glass, the plants ought to have done better. We think the Golden Chain, when it does well, is still the best; but Cloth of Gold is much freer-growing, and has a fine soft feel, as it were, to the eye, and the flowers are a brilliant scarlet. See "Doings of Last Week."

LIST OF ANNUALS (Idem).—1, dwarf pot Poppy; 2, *Schizanthus pinnatus*; 3, *Clarkia integrifolia*; 4, *Chrysanthemum Burrigii*; 5, *Calliopsis pygmaea*; 6, *Portulaca*, mixed; 7, Ice Plant; 8, *Collinsia bicolor*; 9, *Oxyura chrysanthemoides*; 10, branching Larkspur; 11, *Erysimum Peroffskianum*; 12, *Gaillardia picta*; 13, *Gilia tricolor*; 14, *Delphinium Ajax humile*; 15, *Calliopsis bicolor*; 16, *Calliopsis cardaminifolia*; 17, *Phlox Drummondii*. As you want to know how these transplants, we may say that 1, 2, 3, 4, and 5 transplant tolerably well; 6, indifferently; 7, medium; 8 and 9, well; 10, very badly; 11, 12, and 13, pretty well; not so, however, 14, 15, well; 16, we do not know the variety; 17 likes a damp and rather peaty soil. Moist dull weather will enable you to transplant the whole with tolerable success, excepting the Larkspurs, which are best sown in small pots and transplanted whole.

EVERGREEN TO COVER A WALL (P. S. O.).—The wall being 3 feet high and in a damp place, we think that *Escallonia macrantha* is about the best plant that we know of for the purpose, as fast-growing plants are unsuitable. The place being damp and shaded, prevents many of the more showy shrubs being planted. Some of the *Berberis* might do; or a *Cotoneaster* looks not amiss, but best when allowed to ramble where it likes. With regard to perennials for a small garden, some of our Numbers for last year contain select lists of plants of this kind, which may, perhaps, suit your purpose. We are also promised an article on this subject from a correspondent.

ONE FURNACE FOR TWO FLUES (R. A.).—You can do as you propose with one furnace and dampers; yet we would rather have a separate furnace close to the other one for the separate flue. You may manage them together admirably yourself, but your stoker may not be so attentive.

VINES BREAKING PREMATURELY (J. Mackenzie).—In such circumstances we would allow the Vine to run without stopping, and give more expansion to the laterals. There is no rule without exceptions. The directions of Mr. Thomson are admirable, but in extreme cases he would vary them. It is of little consequence the few buds breaking; the shoots will yet get pretty strong, and will form good buds. We should not like *Musa Cavendishii* to be subject to a lower temperature than 50° in winter.

FLOWER-GARDEN PLAN (D. O.).—The left-side group will look very well, with one change. In place *Perilla* in the centre and *Cineraria* round it. We think the other side would look better if balanced in colour with the left side. There is no attempt to do this, and we think there will be a wearisome monotony by having all the beds filled or edged with light colours, as *Flower of the Day*, *Gnaphalium latatum*, variegated *Alyssum*, and *Mangles' Geranium*. We cannot do better than tell you to take a lesson from the left-hand side. The ribbon-border will do well.

FLOWERS OF SALVIA PATENS FALLING (G. D.).—Were it not for the flowers of this beautiful plant falling with the least rain, it would be invaluable for the flower garden, as we have no other blue-flowering plant to equal it. Heavy dews late in the season have the same effect as rain. There is one or two other blue-flowering *Salvias* less disposed to shed their flowers than this one, as *S. Grahamii* and another; but they are much inferior to *S. patens* in beauty; in fact, they are no better than some ordinary *Veronica*. We fear we cannot suggest a remedy.

LETTUCE SEED (G. A.).—Thanks. The seed has been sent to the parties you directed them to.

MANURE WATER FOR ROSES (Idem).—As you say farmyard manure water is not to be had, the next best is sewerage, which may be laid on tolerably strong, as the roots of *Roses* run much deeper than those of herbaceous plants, and consequently the sewerage is much filtered ere it reaches them. In default of sewerage, guano water will do. Generally speaking, *Roses* benefit much by a good dose of manure water after flowering, as it helps to restore them from the exhausted condition a heavy crop of flowers leaves them in.

PAINT FOR POSTS (A. Q.).—Nothing preserves either the end of posts inserted in the soil or the inside of plant-tubs, so well as charring them. Creosote would be as good as linseed oil in the mixture you mention. We should mix two gallons of hot (not boiling) coal tar with one gallon of creosote. The latter is poisonous.

ACACIA PROPAGATING (B. B.).—*A. armata*, *Drummondii*, *grandis*, and others strike freely from cuttings taken off the young wood when about 2 inches long and put into sandy soil in a hotbed. Many of the species also seed and reproduce themselves that way. The specimen you send seems to be *A. Hesterti*. The greatest enemy to *Acacias* is the white scale, which is very difficult to exterminate. If it be confined to the old wood a slight coating with sweet oil, laid on with a camel's-hair brush, is the best remedy we have tried, as it improves rather than deteriorates the appearance of the wood. Your *Cinerarias* were not better than many others already in cultivation.

ALOE FLOWERING AND OUTGROWING THE HOUSE (F. F.).—If you could turn the plant out and erect some covering that would shelter the flower from rain and extreme sun, and at the same time not shade the plant, it would continue in flower much longer than if fully exposed. The plant will bear all the cold we are likely to have; in fact, it is all but hardy. But if you wish to preserve the bloom in a state of beauty as long as possible, it must not be exposed to all weathers.

WHITE VARIETY OF VINCA MINOR (Sible Heddingham).—It is mentioned in "British Wild Flowers," published at our office. It is not uncommon.

INSECT IN ORCHARD-HOUSE (X. Y. Z.).—See "Doings of Last Week."

NAMES OF PLANTS (Constant Subscriber).—No. 1, *Stellaria holostea*; 2, *Caltha palustris*; 3, *Viola canina*; 4, *Arum maculatum*; 5, *Polypodium vulgare*. (*J. C. H.*)—1, *Ribes sanguineum*; 2, some *Berberis*, but the leaves are imperfect; 3, leaf only. (*J. D., Forfarshire*).—1, *Petasites vulgaris*; 2, *Mercurialis perennis*; 3, *Nepeta glechoma*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY-JUDGING IN PRESENCE OF THE PUBLIC.

PUBLIC attention seems at the present time more than usually directed to the judging of our general poultry exhibitions, and among the many new arrangements that have for a time been adopted and then proved useless, perhaps nothing has been suggested more fraught with objections than that of awarding the premiums in the presence of contending exhibitors. The principle is based on ground the most open to produce contentions of any hitherto known; for it would indeed be a matter of difficulty to devise a plan so well calculated to sow broadcast the very elements of dispute as the one just referred to.

I was present a short time back at a meeting where the system was fairly tried, and it was by no means an easy matter for any

casual bystander to determine who were the most deserving of commiseration, the Judges themselves or the disappointed competitors. Grouped within a few feet only of the arbitrators followed a throng, not only of parties curious to know the result, but still more so by those whose actual contending interests were strongly implicated in the decisions. It must be evident on the slightest reflection that where so conflicting desires for mastery exist, the usual routine of consistency will not be very rigidly adhered to where openly spoken and timely suggestions are hoped to warp the opinions of those officiating.

The impropriety of competitors requesting Judges to "reconsider" before making their final awards was thrown aside as useless etiquette, and the matter was at length so extravagant that cheers or murmurs followed the affixing of almost every card, whilst a corresponding measure of dispute and abuse not unfrequently broke out among the respective owners themselves, and in these latter cases blows seemed imminent.

I find that about five years since the same plan produced precisely the same result when reduced to practice, though then tried in very far distant localities.

I have not ever seen anything so productive of wrangling and dispute among exhibitors, or so utterly objectionable to arbitrators; nor would it be necessary to encroach on your pages had not application been made to several committees to adopt the plan complained of. Surely the awards at any exhibition should be so conducted as not to permit for a moment any interference with the officials, on whose deliberate and unmolested scrutiny so much depends. It is, therefore, in the hope to bring the matter more fully under the consideration of those interested in the perpetuity and welfare of poultry exhibitions that these few remarks have been indited by—AN AMATEUR.

POWTERS—A HINT.

EVERY lover of pets, whether of Bantams, Rabbits, Pigeons, or Hawks, or of the "smaller deer" Doves, singing birds, or white mice, residing in or near to Bath, any time between the beginning of this century and a few years since, knew "Old Hobbs, bird-dealer, No. 1, Trim Bridge," in that beautiful city. Perhaps my mention of this old man may revive in some of your readers the memory of a friend of bygone days. However that may be, I knew the old Hobbs but of some ten years ago. Far gone was he towards eighty—a thin, bent, small old man, with sharp piercing eyes, and aquiline nose, quaintly clad in short jacket and fur cap. He lived among his birds every day, and all day long, and so bird-like had he grown—to my eye, at least—that if I had found him some day in one of his larger cages quietly feasting on hempseed I should have been scarcely surprised. Poor old man! his life had been no path of roses. Sorely vexed was he, too, by intrusive boys who would hang over the half-door of his shop, and somewhat angrily did he rate them; powerless anger, alas! for the next minute they returned, eyeing the little shop all over, and criticising its inhabitants. A little short, and curt, and crusty was he also to new customers, but he had seen better days, to which, after I had become a crony of his, he was wont to refer with sadness: hence I held him excused, and I daresay every thinking person would.

"Such a pair of Pigeons, sir," he would say, "I used to sell for 30s. a-pair, and now I don't get 10s. for them; but no gentlemen keep the birds now, only schoolboys;" and then he would add bitterly, "and they make presents of them. There's no trade now-a-days."

But to my tale. I pitied the old man, and asked him to spend a day with me in the country, and never shall I forget his softened look. "Thank you, sir; very kind of you, but I can't leave them;" waving his hand towards his feathered and furred family. Forthwith we were friends; he always let me know if he had anything choice, and welcomed me with a smile. Now, I never knew old Hobbs' equal in knowledge of Pigeons. One day, standing before a cage of fine Blue Powters, I said, "Pity they wo'n't bring up their own young ones; for it makes keeping them so troublesome."

"Nonsense, sir, they will if there're only fed properly. Now, listen to me, sir; feed them on beans, and they will rear their young as well as any Pigeons."

It happened that a friend of mine bought these very Powters; they had several pairs of young ones, none of which they reared. He then fed them on beans, and I saw them some months after-

wards with several pairs of young ones parading in front of my friend's house. This, then, is the hint I beg leave to give to your Powter-loving readers. I myself have not been a breeder of Powters for some years. Even if the plan of bean-feeding does not answer with every pair, still, if it does with some, here is a gain: and if your knowing readers already know it, and smile at my want of knowingness, still, on all hands, I hope my motive for communicating this fact (a fact in one case at least), will be my full apology.

I the more readily send this, as in none of the Pigeon-books I possess, neither the old ones nor the two newer works, not even in that admirable and exhaustive one by Mr. Brent, "The Pigeon-Book"—the only one I know up to the present day—is the necessity of feeding Powters on beans mentioned.—WILTSHIRE RECTOR.

P.S.—Just let me add that a son of old Hobbs carries on, not unworthily, his father's business.

KEEPING DUCKS.

It is said that a nobleman on coming of age once asked in despair, on being told he had £50,000 per annum, "What could a man do with £50,000?" Many of our readers—and we hold the same opinion ourselves—think a great deal may or might be done. It takes our breath away to think of such an income. We fancy we would do nothing but good; we would restore the golden age to the place fortunate enough to be our residence; we would encourage virtue, put down vice, and keep lots of poultry. This puts us on our feet again. It is a common thing to hear the owner of a thousand acres lament his inability to keep more than one breed for want of convenience, and regret that he cannot keep Ducks because he has not a piece of water.

We have six poultry-houses on an acre of land. It is an orchard, crowded on two sides with trees. Each house is 12 feet long by 6 wide, 6 feet high in front, with a slated roof, slanting to 4 feet in height at the back. An enclosed space in front of each house is 21 feet long by 12 wide. Each house has a separate breed for tenants, and each has the run of the orchard for two hours every day. This involves no trouble. The fowls look for their liberty, and return cheerfully to their confinement. Of course the breeds are selected. They are Cochins, Spanish, Brahmas, and Crève Cœurs. We should not expect Dorkings to do as well. It is impossible for any birds to be in higher condition than these are. Their food is ground oats twice per day, whole corn given sparingly at midday, Indian corn once per week.

Now for Ducks. People imagine that a lake is almost a necessity for half a score of Ducks. It is a mistake. We keep a great many, and, protected by our incognito, we do not blush to say they have in the way of water only a ditch. This is, perhaps, 18 inches deep in places. This is all that is necessary. They enjoy it very much, they are in perfect health, they lay and breed well. The plain and sober truth is, that Ducks do not live on the water because they can swim, any more than birds live in the air because they can fly. Ordinary Ducks and Geese seldom take to the water except as a refuge. It is wanted for the condition and comfort of their plumage, it has much to do with their health; but for all necessary or useful purposes a puddle is sufficient, if it be 18 inches deep.

LARKS AND WAGTAILS.

ALTHOUGH the Larks, Pipits, and Wagtails have by naturalists been separated into three orders, still I think there is even more similarity between them than there is between some of those birds classed in one order as Finches.

Of the Larks proper we have only two species common in this country—the Skylark and the Woodlark; the Crested Lark, common on the Continent, is only a rare visitant to England.

Of Pipits we have more species, all of which are frequently confused under the common title of Titlarks. The commonest is the Meadow Pipit or common Pipit Lark, which, like the Skylark and Woodlark, remains with us all the winter. The next is the Tree Pipit, which is the true Titlark of the London bird-fanciers—a delicate bird much prized for its song, and which is migratory, passing only the summer months in this country. We have also the Rock Pipit or Shorelark, a rather local bird, more frequently found on the seacoast, and one or two others occasionally met with, but which can scarcely be called English birds.

Of Wagtails we have three species:—The Yellow Wagtail or Woolwhite, a tender migratory bird, which is not very common, and leaves us in autumn for a warmer clime; the Grey Wagtail, which has some yellow in its plumage and is often confused with the preceding, and which is more frequently met with, and remains all the winter; as does the common or Pied Wagtail, whose black, white, and grey pied plumage is well known, as well as its common names of Paddy Wash Dish, Dishwasher, or Water Wagtail. All these birds run on the ground—they do not hop. They are insect-feeding. Their legs are long, and the feet ill-adapted for perching. The tertiary feathers are long, forming a covering for the wings, in which respect they slightly resemble the Waders. The gradations of variation from the Skylark, through the Pipits, down to the common Pied Wagtail, are very gradual.

The Skylark is a very useful bird in the destruction of insects of many sorts. Wireworms are largely consumed by him, and he prefers the open fields, where tree-perching birds are less frequent. When hard pressed in cold weather he will eat a few small seeds and even oats when he can find them, if insect-food is scarce; but as his bill is not formed for seed-shelling, it is a great labour for him to extract the kernel from the husk, which feat he performs by pinching the oat at the base and beating it on the ground till he knocks it out. He will also eat a few blades of grass or leaves of clover: and hence some farmers foolishly blame the birds, never considering the great good they do in the destruction of insects that would damage an immense proportion of the crops, while the injury done by Larks is in reality a mere trifle. The Woodlark is more a bird of the waste and wild parts, though it often comes on the arable land. In food he is even more strictly insectivorous. His song is considered the most plaintive, wild, and flute-like of all birds, and by the fancier is even preferred to the merry carol of the Skylark.

Pipits are also useful birds, frequenting the commons, downs, meadows, and fields, and feeding on insects all the year round. The Tree Pipit or Titlark, however, prefers enclosed fields where trees or high hedges are handy, from which they collect caterpillars to feed their young on, and from which they spring into the air, rising almost perpendicularly to some height, when, stretching out their wings, they again descend, singing as they come down. Their song is appreciated by bird-fanciers, though I am not aware that they regard that of the other Pipits.

Wagtails are rarely kept in cages. They may be said to feed everywhere; but seem to prefer short pastures, where they play round the grazing cattle, catching the flies and insects disturbed by them, or along the margins of streams, where they catch the gnats and other insects which there abound. No fault can be found with these merry active birds that take neither grain nor fruit, and they should be always protected and encouraged. No wanton nest-destroying should ever be allowed by those who cultivate the soil. Birds are sent each in their respective place to keep in check insects that would otherwise entirely demolish all crops. What would then be our condition?

I am much in hope that the time is not far distant when this subject will receive the attention it deserves. At present insects are far too numerous, and often are complaints made of their ravages, and the failure of crops through their agency; and little is said of the thinning of many crops by agents which are, perhaps, often not even suspected, because they work under ground or unnoticed.

Birds are man's great allies, sent to feed on these his foes; and I feel that they have but small credit for their services, which are very great—quite incalculable, while if they do a trifling injury, or cause some annoyance, they receive an exaggerated amount of blame. Yes, even when seen looking for some insects they are not unfrequently blamed for the damage done by the very insect they are in search of. Being accessories after the act, or in suspicious proximity, is often sufficient condemnation. I must, therefore, use my pen in pleading the cause of the birds—not that I would deprive the schoolboy of his bird-nesting, or check the young naturalist in the bud. I see but little cruelty in taking the eggs from the nest while yet fresh laid if any use can be made of them; such, for instance, as a collection where care is taken of them, and only a few of each species are required, or it may be a poor child may take the fresh eggs to boil or to make custards of, or put in a cake or pudding. In such cases I see no more cruelty in the act than that of using the eggs of domestic poultry. But when boys, or even men, ruthlessly destroy every nest they find, whether hardset or containing young, then I consider it a wanton cruelty that should be checked in every

way. Or if an epicure likes Larks or Wheatears, or such small fry, I am not one of those who would object to his eating them in moderation. I see no wrong in a person killing a pair of each sort to form a stuffed collection, or catching them to keep a living one, to enjoy their song, or watch their habits. I believe that all things are given for man's use; and if boys like to catch Sparrows to convert into a pudding, I would not say them nay. But wholesale destruction of birds for the mere sake of killing, vindictive poisoning, and indiscriminate nesting, I think shows a cruel and ignorant mind which calls for reprobation.

Few birds, even those thought to be destructive, do a tithe of the injury laid to their charge; for an ignorant person, annoyed at some trifling loss which a little forethought might have saved, often, I fear, retaliates on the birds for his own neglect. Such an one will use poison or advocate indiscriminate bird-murder, and he assuredly will cause greater loss another season to himself and neighbours by the rapid increase of insects. These proceedings are what I wish to deprecate, and I fear they are too common. To say the least of it, such a course is "penny wise and pound foolish." It is here I must apply to the prejudiced. If they could but perceive the loss they bring on themselves, and perceive the cause and effect, the breeches-pocket account would be the most convincing argument.—B. F. BRENT.

BEE-FEEDING.

Is "AN AYRSHIRE BEE-KEEPER" right in hinting that our friends on the north side of the Tweed are so addicted to the use of the bottle that they begrudge it to their bees? Never having crossed that famous stream, I cannot myself determine the question; but this I can say, after a most thorough trial of the bottle, it is the best bee-feeder ever contrived. During the last three bad seasons I must have administered upwards of a ton of food by its means without the slightest accident, or the least inconvenience. Recent observation in a friend's apiary leads me, however, to advise that in all cases where a wide-mouthed bottle is used, a piece of perforated zinc should be interposed; as if this be omitted, and the top of the hive be not perfectly level, the food is apt to run out.—A DEVONSHIRE BEE-KEEPER.

MORTALITY OF HIVES.

As in the communities of men so in the communities of bees, the influences which affect their welfare, either for good or evil, often date long prior to the results which flow from them. The year 1862 was notoriously the most adverse for bees which has been experienced for a long period back, while the two preceding years were scarcely much better. A series of unpropitious seasons thus following each other in close succession, the autumn of 1862 witnessed a state of matters lamentable to contemplate, and which the experienced apiarian knew well would in due time be productive of those dire evils and calamities which are now being felt with such awful severity throughout the whole length and breadth of the land. And what was the state or condition of the great majority of hives at that season? Why, they were in every respect in the most unsatisfactory state possible. They lacked what I consider to be the three great and essential requisites which constitute a thoroughly good colony—namely, sufficiency of bees, sufficiency of food, and a perfectly and permanently prolific queen. The consequences are that from one or other of these causes the mortality of hives this spring is immense. Whole apiaries, in many cases, have become completely extinct, while here and there in every bee-keeper's garden may be seen the sad evidences of disaster and ruin; and such has been the unfavourable nature of this season up to the period I write (10th April), that unless good weather set in without delay, a third of those which still survive will droop away and die, or become eventually good for nothing. One of your correspondents prophesies in No. 106, that "we shall have a fine summer for honey if only we have a dry and cold six weeks before us." All I can say in regard to this prophecy is that if the fine honey season in prospect cannot be had without the preliminary six weeks of cold, I fear we shall have few bees to enjoy it, and that the opening flowers of the looked-for summer will be doomed, so far as the bees are concerned,

"To blush unseen,
And waste their sweetness in the desert air."

But let us hope for better things. A speedy change of weather

will prevent this evil, while a continuation of the present cold dry weather will be utter ruin to many weak hives still holding out hopes of recovery.

One of the reasons which I have above assigned for the ruin of not a few hives this spring refers to the imperfect fecundation of the queen. One form or manifestation of this abnormal state is alluded to by your correspondents "B. & W." and "A DEVONSHIRE BEE-KEEPER" in the Journal of April 7, in the case of such queens as produce only drone-brood. Whether we refer this abnormal condition of the queen to the Dzierzonian doctrine of "parthenogenesis" or the Huberian theory of "retarded impregnation" is of little consequence so far as results are concerned; for I suppose we are all agreed as to the uselessness of such queens.

I observe that both of the correspondents alluded to intend to avail themselves of the drone-brood thus produced as helps in the process of artificial queen-rearing. If I might presume to give an opinion in the matter, all I can say is that I would have very little faith in such questionable helps. I do not know what sort of drones are produced in the apiaries of these gentlemen by such conditioned queens, but those which I have seen produced in like circumstances are generally extremely puny and often malformed from being bred in small cells; and if the followers of Dzierzon, like their master, look upon the most perfect of the drone species, even as imperfect creatures, "for the production of which," as Dzierzon says, "fewer conditions and forces are necessary than for the production of the more perfect beings the females," then certainly such puny-looking things as are generally produced by drone-breeding queens must be held as perfect monstrosities. But be this as it may, I should not, I repeat, put much reliance upon their aid in queen-rearing, and I suspect that little benefit will result from preserving them, if, indeed, they can be preserved so long; and that experience will show that towards the attainment of the object desired with respect to queen-rearing, there is something more required than the mere presence of such suspicious-looking and questionable agencies.

I shall, perhaps, at some future time, enter more minutely into a consideration of the three points I have mooted above as constituting the three essential requisites of a good colony of bees. Each of these is important in itself, and if the apiarian would only properly appreciate the importance of each of these requisites and foresee the evils the want of any one of them is sure to produce, he could with greater reliance in the autumn set apart such well-conditioned hives for stock as would, in all probability, not only survive the perils of the winter but the greater and more trying perils of the spring.—J. LOWE.

UNITING BEES.

I COMMENCED bee-keeping last season, my stock comprising a Nutt's wooden hive (two years old), one square wooden box, and one straw skep. The three hives being very heavy and full of bees, by September my stock had increased to eleven, and on the 8th of that month I weighed them, including the footboard.

	lbs. ozs.		lbs. ozs.
No. 1	51 8	No. 6	19 8
No. 2	32 0	No. 7	15 8
No. 3	32 0	No. 8	35 8
No. 4	30 0	No. 9	15 0
No. 5	40 0	No. 10	23 8

The Nutt's hive I could not weigh. The next morning I administered chloroform (one drachm to each hive) to the five weakest hives, 4, 6, 7, 9, and 10, destroying the queen, and placing the bees in an empty straw skep, with perforated zinc at top, and coarse cloth at bottom, to allow the fresh air to revive the bees, and at night placed each hive on the top of 1, 2, 3, 5, and 8, having first smeared a little honey on the top of each of the latter hives. There appeared no fighting, and I do not think that I lost more than a quart of bees, and took from 20 to 30 lbs. of honey.

Having been away from home, I have delayed weighing my hives a fortnight later than I could have wished, but this is the result this day.

	lbs. ozs.		lbs. ozs.
No. 1	34 0	Showing a	16 8
No. 2	dead	decrease	
No. 3	26 6	in weight	5 10
No. 5	31 0	during the	9 0
No. 8	25 8	7 months.	10 0

leaving me four hives (besides Nutt's) immensely strong, proving the folly of destroying the life of these valuable insects.—A GUILDFORD BEE-KEEPER.

DO LIGURIAN BEES SUCK THE RED CLOVER?

I AM informed that it has been stated, that where the Italian species of honey bee has been introduced, it has been found that they suck the common red clover which, it is well known, is commonly neglected by the ordinary hive-bee. I shall endeavour myself to determine the point during this season, but as red clover is somewhat scarce in my immediate neighbourhood, I shall be very glad of the assistance of other observers where the Ligurians have been established. One caution is, however, necessary, since it is stated that after the clover is cut the flowers of the second crop are a little shorter than those of the first, and, therefore, common bees can suck them; also, the flowers of the second crop (and, perhaps, those of the first), are very often perforated near their bases by bumble bees, and they are then sucked by hive bees, so that it is necessary to note whether the bees suck at the base or at the mouth of the flowers.—A DEVONSHIRE BEE-KEEPER.

BEE FOOD.

COULD any of your correspondents inform me if ever they have tried the feeding of their bees with infused hops? I have fed them these number of years with them, and consider it a great improvement. The quantity I use is about $\frac{1}{2}$ oz. to 1 lb. of sugar. The bees take it readily, preferring it to sugar alone.—W. T. BLANTYRE.

CARROT SOUP.—To seven pints of soft water put one pound of lean beef cut thin, half a pint of split peas, one large carrot cut into pieces, one or two turnips, some celery, and a large onion. Boil all together until the liquor is reduced to one-half the quantity, then strain it through a coarse hair-sieve. Have ready three or four large carrots, half-boiled and grated fine, put this into the soup; boil it with pepper and salt to your taste. Just before it gets to the last boil, take a little fresh butter, about the size of a walnut, rubbed in flour, and put into the soup. Serve it up with fried bread. If more soup is wanted, all the ingredients must be doubled, with the exception of the grated carrots; and, if they are large, six will be found sufficient for a good-sized tureen.

OUR LETTER BOX.

WORK ON PIGEONS (*H. F. B., Castleton*).—You can have, free by post, Brent's "Pigeon-Book" from our office if you send your direction with twenty postage stamps. It fully describes the different kinds, and gives a woodcut of most of them.

INCUBATOR (*A Young Amateur*).—You might obtain one, perhaps, by advertising for it. We know of no maker now. Stable-manure varies very much in the temperature to which it gives birth, and the duration of that temperature. It is too uncertain for hatching purposes, as a regular temperature of 105° or 106° is required. Your Duck egg is probably double-yolked, and the occurrence is not unusual.

LAMENESS IN DUCKS (*J. H.*).—We attribute the lameness principally to the brick floor. It is bad for all animals with long nails at the end of their toes. All Gallinaceæ and Game straw does not help much. Do away with it, and substitute loose gravel 4 or 5 inches deep. The run in grass is good, especially when the dew is on it in the morning; but a thorough wash is wanted at times. You need not make a large and expensive pond, but you may sink a washing-tub, and that will give all the water that is absolutely necessary. They cannot do without that.

DUCK EGG-BOUND (*An Amateur Duck-breeder*).—She is too fat, and the egg-passage is inflamed. Give her nothing but mashed potatoes mixed with a little barleymeal as food; and a tablespoonful of castor oil, and a pill containing two grains of calomel and one-sixth of a grain of tartar emetic every second day, until the symptoms subside.

ADVERTISEMENT (*Colchester*).—The charge would be 3s. 6d.

PURCHASING BEES (*F. Davis*).—You had better buy a swarm of some bee-keeper in your own neighbourhood. Prices vary considerably in different localities.

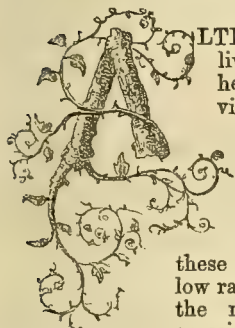
ROSSELLE PAROQUETS NEARLY FEATHERLESS (*M. G., Croydon*).—If your birds have neither cold, nor are too fat, nor have been fed on animal or greasy food, the cause of their losing their feathers from the breast and other parts is owing to their blood being overheated, which causes an irritation of the skin, and consequently the birds nibble their feathers off. We would recommend you to endeavour to wean them off the hempseed, and give oats, soaked overnight, and canary seed; also a little soaked bread, with plenty of fresh watercress, but no animal or greasy food of any description. Take care that the birds feed, as you will have some difficulty in weaning them from the hemp, which should be done by degrees. With a fine-rose-headed watering-pot give the birds a bath twice a-day when the weather is mild, taking care to have the water lukewarm; also place a pan of water in the cage.

WEEKLY CALENDAR.

Day of Month	Day of Week	APRIL 28—MAY 4, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.		Sun Sets.		Moon Rises and Sets.		Moon's Age.		Clock after Sun.		Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	m.	h.	m.	h.	m.	h.	m.	h.	m.	s.	
28	Tu	Star of Bethlehem flowers.	30.124—30.017	74—32	—	—	40	af 4	15	af 7	7	2	10		2	34	118
29	W	Harebell flowers.	30.247—30.027	69—34	E.	—	38	4	16	7	27	2	11		2	43	119
30	Th	Wagner born, 1641. B.	30.085—29.924	74—43	S.E.	.03	36	4	18	7	47	2	12		2	52	120
1	F	S. PHIL. & JAS. P. ARTHUR B.	29.913—29.900	79—50	S.E.	.02	35	4	20	7	8	3	13		3	0	121
2	S	Abercrombie died, 1808. [1850.	30.162—30.078	65—35	N.	—	33	4	21	7	32	3	14		3	7	122
3	SUN	4 SUNDAY AFTER EASTER.	30.146—29.796	59—45	E.	—	31	4	23	7	rises.		O		3	14	123
4	M	Bonpland died, 1858. B.	29.776—29.673	78—50	S.	.12	29	4	24	7	9 a 3		16		3	21	124

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 61.2° and 38.7° respectively. The greatest heat, 81°, occurred on the 28th, in 1840, and 4th in 1833; and the lowest cold, 13°, on the 29th, in 1861. During the period 158 days were fine, and on 94 rain fell.

GARDENERS' BENEFIT SOCIETY.



ALTHOUGH gardeners are a long-lived class, yet their labour being heavy and their exposure to sudden vicissitudes of temperature very frequent, they are among the classes who are most liable to rheumatism and other illnesses temporarily incapacitating them for labour.

Gardeners, therefore, from these causes, and from the generally low rate of wages they receive, are of the number who especially require occasional money aid; yet being also

especially liable to change their situations, they are consequently restrained from becoming members of local Friendly Societies.

Other societies, usually called benefit clubs, are chiefly beneficial to the landlords of the inns where they hold their meetings, and too often induce some of the members to spend as much in drinking and smoking as they have to contribute to the club. Nor is that the only objection to such clubs; for being founded on erroneous principles, or upon no principle at all, the funds too often fail, and the contributor's money has been expended without any benefit to himself.

The usual principle, or rather no principle, of such clubs is, that all the members pay an equal weekly sum to the fund. The unfairness of this to the younger members is demonstrated by the indisputable fact, that the older members are liable, on an average, to exactly twice as many days of sickness in the course of a year than are the younger members.

Mr. Finlayson, Actuary of the National Debt, made a report to the House of Commons upon this very point, and after examining and comparing the returns made from all the Friendly Societies throughout the kingdom to the Registrar appointed by Act of Parliament, he states,

"In the case of heavy labour the average amount of sickness is:—

In the first twenty-five years of labour, from the age of 15½ to 40½ . . . 189½ days.
In the next twenty-five years, from the age of 40½ to 65½ . . . 391½ days."

Other results from the light-labour classes coincide with this, and Mr. Finlayson concludes by saying, "These results indicate a law on this point, and to establish the conclusion that the sickness undergone during the first twenty-five years of working life, is the exact half of that undergone during the second twenty-five years."

Therefore, as regards the individual, it is clear that where a member included in the first period pays 1s. to secure a sick allowance, a member included in the second period must pay 2s. to derive the same allowance and sustain the funds of the Society.

Although for the sake of arriving at this valuable statistic No. 109.—VOL. IV., NEW SERIES.

tical information, the subscribers to Friendly Societies have been divided into only two periods of twenty-five years each, yet the returns from the kingdom's societies from which that information is derived, shows that every year of labouring life averages a different amount of sickness, gradually increasing as age increases. Upon those returns Mr. Finlayson has calculated a set of most trustworthy tables, showing the monthly payment a man engaged in heavy labour ought to make, commencing at any age after 14 years, to secure to himself an allowance of 10s. weekly during sickness until he has attained the age of 70, 65, or 60 years.

Taking the limit as 70 years, then if he becomes a member at 15 years of age, he would have to pay 1s. 2d. monthly; if he begins at 30, then 1s. 6d. monthly; and if at 45, then 2s. 1d. monthly. This is omitting fractions of a penny, and making no allowance for the expense of managing the Society.

That management requires care and circumspection. Diseased and broken-constituted members have to be excluded, and unfounded claims have to be checked.

When the age of 70, 65, or 60 years, whichever of those three periods a subscriber has selected, has been attained, then another aid of a benefit Society is available, which provides a weekly payment for the remainder of the subscriber's life. This is quite independent of the allowance-in-sickness fund, and requires an entirely separate subscription.

Mr. Finlayson from the source of indisputably sound information above referred to, has returned to the House of Commons a set of tables, showing for what monthly payments a pension of 5s. per week can be secured, to commence at the age of 70 years, 65 years, or 60 years.

If the gardener, for example, wishes, to secure such a pension when he attains 70, and begins to contribute for it at the age of 15 years, he must pay 6d. per month; if he begins at 30 years, 1s. per month; and if at 45 years, 2s. 6d. per month.

Consequently, in such a benefit society a gardener beginning when 15 years old to pay to its funds 1s. 8d. a-month, may secure 10s. per week during sickness until he is 70; and 5s. per week for the remainder of his life. If beginning to subscribe when 30 years old, 2s. 6d. per month will secure to him the same payments; and if beginning to subscribe when 45, then 4s. 7d. must be his monthly contribution.

The preceding are the chief objects of a Gardeners' Benefit Society so far as its members are concerned individually; but there is another function employable by such a Society for the benefit of the community, whether they be gardeners or the employers of gardeners.

Such a Benefit Society could only be managed by a Board of Directors and a Secretary. Those Directors should be men identified with gardening, and in whom all gardeners have an entire confidence. Those Directors might have periodical meetings for the examination of any gardeners who chose to appear before them, and to whom the examiners might grant a first, second, or third-class certificate, according to a previously announced

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standard. A register of all such certificated examiners to be kept at the Society's office; the value of a power to refer to which would be apparent both to the employer and the employed. Having thus particularised the objects as well as the foundation on which a Society so desirable should be established, with a certainty of its being permanent, we will next consider the form and rules which we consider it should adopt.

As a trustworthy guide in this, we have selected for a basis the Hampshire Friendly Society, which, founded as long since as 1825, is now prospering, and after during thirty-eight years meeting all claims upon it promptly and liberally, has now invested in public securities more than £31,000.

PATRON.
VICE-PATRON.
PRESIDENT.
VICE-PRESIDENT.
TRUSTEES.
DIRECTORS.
ARBITRATORS.
AUDITORS.
HONORARY PHYSICIAN.
HONORARY TREASURER.
SECRETARY.

Rule 1.—The object of the Gardeners' Benefit Society shall be to raise, by the contributions of its members, a fund for the relief of its benefit members in sickness and old age.

Rule 2.—The Society shall consist of benefit and honorary members resident in the United Kingdom.

Rule 3.—Benefit members shall be those who contribute either for themselves or others, in order to obtain any benefits for which provision is made by the tables of the Society.

Rule 4.—Honorary members shall be those, who, not being benefit members, contribute not less than £5 by donation, or 5s. by yearly subscription.

Rule 5.—The Society shall be under the management of a Central Board, which shall consist of the following officers: the President and Vice-President, who shall be honorary members, five Directors, three of whom shall be benefit and two honorary members, eight Trustees who shall be honorary members.

Rule 6.—The other officers of the Society shall be a Treasurer, a Secretary, four Auditors, and an Honorary Physician.

Rule 7.—The President, and, in his absence, the Vice-President, shall preside at all meetings of the Society, of the Central Board, and of any Special Committee; and shall have a casting vote in addition to his own. In the absence of both President and Vice-President, a chairman elected by the meeting shall preside with the same powers.

Rule 8.—The Trustees shall from time to time invest all monies which may not be required for the current expenses in real or Government securities; or, with the consent of the Central Board, in such other ways as are in accordance with the provisions of the act 13 & 14 Vict., c. 115; and such funds may be transferred, or withdrawn, as the Board may direct, for the use and benefit of the Institution, upon the authority of not less than two Trustees, whose signatures to that authority shall be duly attested.

Rule 9.—The Treasurer shall be responsible for such sums of money as may from time to time be placed in his hands on account of the Society, and for the investment and application of them under the authority of the Central Board, or Trustees, as the case may be, in such manner as not less than two of them, whose signatures shall be attested by the Secretary, shall in writing direct. He shall balance his cash accounts quarterly, and supply the Secretary with a duplicate thereof.

Rule 10.—The Secretary shall transact the business of the Society under the direction of the Central Board; he shall attend all the meetings of the Society, and of the Central Board; he shall keep all the books, of which, together with all documents, he shall have charge. His salary shall be such as shall be fixed by the Board.

Rule 11.—The Auditors, any two of whom shall be competent to act, shall examine the accounts of the Society quarterly, and report the same to the Trustees and Central Board; they shall prepare a general statement of the funds and effects of the Society up to the 31st of December inclusive in each year, specifying in whose custody the said funds and effects shall be then remaining, together with an account of all sums of money received and expended by, or on account of the Society since the publication of the preceding report. Every such statement

having been attested by two Auditors, and countersigned by the Secretary, shall be presented at the general annual meeting, together with the report of the Central Board; and this statement and report, if approved of by such meeting, shall be printed, and every member shall be entitled to a copy free of expense.

Rule 12.—The Honorary Physician shall examine and report upon all Medical Certificates referred to him by the Central Board.

Rule 13.—The Treasurer, Secretary, and Local Agents shall give such security as the Central Board may require, pursuant to Act of Parliament.

Rule 14.—An Annual Meeting of the members shall be held at London on the third Wednesday in April, at which every member who is not in arrear of his contributions, fines, or subscription, shall have one vote; due notice shall be given of such meeting in two at least of the London newspapers, and two at least of the London gardening journals. At this meeting the members shall consider the financial statement of the Auditors, and the report of the Central Board. They shall elect for the ensuing year, the President, Vice-President, and Directors; they shall also appoint the Auditors, and fill up vacancies among the Trustees; and take into consideration any other matter connected with the welfare of the Society.

Rule 15.—The President, or Vice-President, on a requisition signed by ten members, shall summon a Special General Meeting of the Society: in each case five days' notice shall be given by circular, which circular shall state the object of such meeting; and at such meetings no business shall be transacted except that specified in the notice. At all meetings of the Society, general or special, except in the case of alteration of the rules, five shall be a quorum.

Rule 16.—The Central Board, three of whom shall be a quorum, shall meet at London every Saturday. They shall appoint the Treasurer, Secretary, and Honorary Physician. They shall accept or reject the proposals for payments in sickness, which shall be transmitted to them; and provide for the payment of all sums due from the Society. They shall, on the second Saturday in every month, examine the books and accounts of the Society, and decide upon all other questions that may be referred to them; and they shall, every quarter, take into consideration the Auditors' Report.

Rule 17.—If within half-an-hour of the time appointed for holding any meeting of the Society, or of the Central Board, a sufficient number of members to constitute such meeting be not present, the Secretary of the Society shall have power to adjourn the meeting to such time as to him may seem expedient.

Rule 18.—Any person wishing to become a benefit member of the Society, shall satisfy the Directors as to his character, obtain the recommendation of two benefit members, fill up the forms adopted for the admission of members, and make a deposit of one monthly contribution, which shall be returned to him if he be not admitted. He shall give such proof of his age as the Directors shall think fit, when the payment required from him is governed by it; and if his proposal be for an allowance in sickness, he shall produce a certificate of good health from a surgeon: provided always that when he is unknown to the Surgeon, he shall produce an additional certificate from some other medical man who is acquainted with him and his family; but if there be none such, then from such other person or persons as the Directors may consider competent to give one.

Rule 19.—The monthly contribution of a member shall be due on the day on which his proposal is dated, and on the first Monday in every succeeding month. If all contributions be not paid within a month of the day when due, he shall pay a fine of sixpence for every month they shall continue unpaid; and, if at the end of three months, such contributions, with all fines due, shall remain unpaid, he shall forfeit all claim to the insurance for which the contributions are due. But if such arrears shall have been occasioned by absence from the United Kingdom, the member may, on discharging within six months after his or her return, all arrears with compound interest thereon at £3 5s. per cent. per annum, be again enrolled at the same rate of insurance as before; provided that every such member, if insuring an allowance in sickness, shall have no claim for such allowance on account of any sickness occurring during his absence, and shall, before his re-enrollment, prove the goodness of his health in the same manner as on his first admission into the Society.

Rule 20.—Every member shall, in addition to his monthly

contribution, pay for management, the sum of 2d. a-month, or 2s. annually at Michaelmas. Every member insuring for sick-pay, shall also pay, if required by the Directors, but not otherwise, 4d. a-month, or 4s. annually at Michaelmas, to insure for medical attendance and medicines: and those members who are not so required by the Committee, shall pay 2s. 6d. at entrance, to the Society's Medical Officer for his certificate. Nevertheless it shall be competent for the Directors, if they shall think proper, to make arrangements for the payment of their own Surgeon and Agent; provided always that no benefit member shall in any case be called upon to pay more than 6s. a-year in all for Surgeon and Management.

Rule 21.—All honorary subscriptions shall be considered due on the 1st of January for the year ensuing. They shall be appropriated annually towards the redemption of the payments for Surgeons and Agents due for the current year, and all surplus shall be for the general expenses of the Society.

Rule 22.—That if any dispute shall arise between any member or person claiming under or on account of any member, and the Trustees, Treasurer, or other officer of the Society, or the Directors thereof, it shall be referred to arbitration, 10 Geo. IV., c. 56, s. 27, 28. At the first meeting of the Society after these rules are certified by the Registrar, five Arbitrators shall be named and elected, none of them being directly or indirectly beneficially interested in the funds of the Society; and in each case of dispute the names of the Arbitrators shall be written on pieces of paper and placed in a box or glass, and the three whose names are first drawn out by the complaining party, or by some one appointed by him or her, shall be the Arbitrators to decide the matter in difference. In case of a vacancy or vacancies, another or others shall be elected at a General Meeting.

Rule 23.—If any member shall be convicted of felony, or shall resort to any grossly immoral practice for a livelihood, or shall have wilfully imposed on, or attempted in any way to deceive or defraud the Society, or shall be aware of any such attempt on the part of another member, and not communicate the same to the Directors, he shall be expelled from the Society, and thereby forfeit every claim upon it, unless on an appeal to the Board they shall direct otherwise.

Rule 24.—No member who is a minor shall be capable of holding office in the Society.

Rule 25.—The Rules of the Society shall be printed, and every member on his admission shall purchase a copy, for which he shall pay threepence.

Rule 26.—All assurances for sick-pay shall be contributed for according to the rates laid down in the following tables. Nos. I. and II.

[We do not insert the tables because they are lengthy.]

Rule 27.—A member claiming sick-pay shall give notice in writing to the Directors, who shall provide him with a form of medical certificate, to be signed by the Surgeon attending him. The sick-pay shall become due one week after the date of the Surgeon's certificate, and be payable upon the production of the sick-pay paper, to be also furnished by the Agent, and to be signed weekly, on the day or days of their visiting him, by the Surgeon and by one benefit member, if the sick member be at the time residing within any district of the Society. When a member is not entitled to the attendance of the district Surgeon, he shall obtain the attendance of some duly qualified medical practitioner, and the certificates shall in such case be countersigned by the officiating clergyman of the parish, or by a magistrate of the county in which such member resides.

Rule 28.—A member shall be entitled to full pay when he shall be wholly unable to work, and to half pay when able to earn a little, but unable to follow his customary employment: provided always that any member who during the course of twelve successive months shall have received twenty-six weeks' full pay, shall then be reduced to half pay, and shall not be entitled to full pay again during any further sickness until he has for twelve successive months ceased to receive sick-pay at all.

Rule 29.—Sick-pay shall not be due to any member who has not been such for nine calendar months, unless he shall pay down an entrance fee equal to six monthly contributions, when he shall become free immediately; or to any member whose contributions or fines are in arrear; or to any member whilst he is suffering from any disease or infirmity with which he may have been afflicted at the time of his admission into the Society, or which may have been contracted afterwards by profligacy, drunkenness, quarrelling, or any act whatsoever contrary to law;

or to any member whilst confined in any gaol or bridewell, except it be on account of debt, and then one-half of the sick-pay which would have been otherwise due to such member shall be allowed to him; or to any member whilst at sea, or beyond the limits of the United Kingdom; or to any member who shall allow his sick-pay to remain unclaimed for six weeks; or to any member who shall refuse to answer any questions respecting his health or employment, put to him by any officer of the Society, or be seen to do any work whilst claiming full sick-pay, or be at any public-house or beer-shop, or leave home without the consent of the Surgeon, or shall by any wilful act or misconduct prevent or delay the recovery of his health.

Rule 30.—No person shall insure for sick-pay which together with any sick-pay insured in any other benefit society shall be greater than 20s. a-week, or more than his average earnings.

Rule 31.—No person shall be admitted to insure for sick-pay whose employment in the opinion of the Medical Officer tends to induce disease: and should any member who is insured for sick-pay change his employment, he shall give notice of the same to the Agent within a month; and if the Medical Officer shall be of opinion that the new employment has more than a common tendency to induce disease, then the Directors shall require him either to leave such employment or change his insurance to another table; and if he refuse to do either, the Directors shall have power to adjudicate on the case, and, if necessary, expel him from the Society.

Rule 32.—All insurances for annuities shall be contributed for according to the rates laid down in the following tables:—

[We do not insert the tables for the reason above specified.]

Rule 33.—No person shall insure for an annuity which together with any annuity insured in any other benefit society shall be greater than £30 a-year.

Rule 34.—Annuities which are due weekly may be paid weekly, monthly, or quarterly, at the discretion of the annuitant; but if any payment be unclaimed and left in arrear for a twelvemonth it shall be forfeited.

Rule 35.—Any member to whom an annuity is payable shall forward to the Secretary proof of his identity, according to the form provided by the Society, signed by the officiating minister of the parish, or by a magistrate of the county in which he is residing.

Rule 36.—That a book or books be kept in which all monies received or paid on account of any particular fund or benefit for which the rules of the Society provide, shall be entered in a separate account, distinct from the monies received and paid on account of any other benefit or provision. 9 & 10 Vict., c. 27, s. 4.

Rule 37.—The accounts of the Society shall be laid before an Actuary every five years, or oftener, if thought advisable by any general meeting. If the report of the Actuary show a nett surplus, the interest of such surplus shall be applied to the expenses of management in such manner as the Central Board may direct.

Rule 38.—The returns of the rate of sickness and mortality required by law to be sent by every Friendly Society at intervals of five years, shall be sent to the Registrar of Friendly Societies in England, according to such form as shall be prepared for that purpose by the said Registrar, under the direction of one of Her Majesty's principal Secretaries of State; and with every such return shall be sent a report of the assets and liabilities of such Society.

Rule 39.—The Treasurers, Trustees, Stewards, or other principal officer of every such Society, who by the rules of such Society are or is bound to prepare, or cause to be prepared, the yearly general statement of the funds and effects of such Society, shall be the persons who shall be respectively bound to make, or cause to be made, and to send to the Registrar of Friendly Societies the said returns of the rate of sickness and mortality, and the said report of the assets and liabilities of such Society; and every such person who shall refuse or wilfully neglect to make, or cause to be made, or to send the said returns of sickness or mortality, or the said report of the assets and liabilities of such Society, at the time and in the manner prescribed by the said Acts, or this Act, shall be liable to a penalty not exceeding the sum of £5, to be recovered, with costs, before any two justices of the peace having jurisdiction where such Society shall have its place of meeting, and, on non-payment thereof, the same, with the reasonable costs of conviction, shall be levied by distress and sale of the goods and chattels of the offender or offenders, by warrant under the hand and seal of such justices. 9 & 10 Vict., c. 27, s. 6.

Rule 40.—This Society shall not be dissolved otherwise than with the consent of five-sixths in value of the then existing members, and the consent of all those receiving or entitled to any benefit agreeably to 10 Geo. IV., c. 56, s. 26.

Rule 41.—That in case of any alteration in the place of meeting or dissolution of this Society, notice shall be sent to the Registrar of Friendly Societies in England, seven days before or after such removal or dissolution, signed by the Secretary or other principal officer, and also by three or more of the members of the said Society.

Rule 42.—No alteration of the Rules shall be made, except at a general meeting of the Society specially called for that purpose, pursuant to 18 & 19 Vict., c. 63, s. 27, notice of which, specifying the nature of the intended alteration, shall be given twice at least in two or more of the county papers.

We have thus detailed our opinions relative to the need there is for a GARDENERS' BENEFIT SOCIETY, as well as the basis and rules on which it should be established and by which it should be regulated. In conclusion, we will only add that we shall be glad to receive relative communications and suggestions; and if gardeners will also inform us of their willingness to become members, we will take steps to have the Society organised so soon as we have a sufficient number of such communications to justify the inference that the Society has the approval of the gardening community.

PLANTING FLOWER GARDENS.

How seldom we see a flower garden which really pleases the eye and satisfies the mind at the same time.

I have often trod with pleasure a beautiful lawn, and regarded with admiration and delight the fine specimens of trees and shrubs growing around me, the soft carpet under my feet. The beautiful variety of cool and quiet-looking green foliage, has produced a feeling of tranquil enjoyment and refreshing pleasure I have seldom experienced in a flower garden.

Let me ask what is a flower garden such as is generally seen? Drive or walk to the nearest nobleman's seat in your neighbourhood, and what do you find? a number of formal beds, each filled with plants of the same colour, producing, if well arranged, a brilliant effect, and the gardener who shows you the place tells you how many thousands of *Calceolarias*, *Geraniums*, &c., he plants per year.

I cannot tell what effect this produces on others, but after the first sensation of pleasure, my eye tires of the bright colours, my mind wearies of the sameness, and I begin to speculate on the cost and trouble incurred in propagating and growing so many tender plants which will so soon be dug up and sent to the rubbish-heap. I should no more think of looking long at such a garden than I should continue to gaze through a kaleidoscope without giving a single turn to the instrument.

Perhaps, in the same garden you see a long, broad bed planted in what is called "the ribbon fashion." Here, at first sight, there appears more variety; there is not the same mass of oppressively bright colour to fatigue the eye; you are astonished, delighted at first, but after walking a few yards feel that there is really no variety, it is a beautiful carpet, nothing more—one square of the pattern is enough.

Perhaps, in spring you pay the gardener of some rich neighbour a visit, and you find the beds filled with expensive bulbs, which have to be purchased each season, and are considered valueless after their beauty is passed. Does it not strike you as savouring of ostentation this waste of beauty? Would not a few clumps of beautiful *Hyalinths* give you more pleasure than this evidence of wealth and extravagance?

"What would you have?" says my friend. "Are we to go back to the old mixed borders, where you see a plant in bloom in the midst of a bare space of earth well hoed and raked to keep down weeds, and surrounded at equal distances by other plants, some in bloom, some just appearing above the ground, and some the beauty of which has long since passed away? Is that your idea of beauty?"

"Well, I cannot say that is quite my *beau idéal* of what a flower garden should be; but I should much prefer it to one filled with masses of bedding plants. There would be a chance of meeting a long-lost favourite, which would recall scenes and faces long since passed away; plants which grew luxuriantly in the home of my childhood, or in the garden of my friend. I

might meet a little plant once gathered on a romantic spot visited for the first time in company with those from whom I have long been separated by distance or death, and though the little plant may give rise to recollections at once sad and pleasing, it would be to me 'a sadness not unpleasing.'"

But are these kinds of gardens the only ones? Oh! dear, no. There are polychrome gardens, such beautiful gardens, little beds of flowers divided by walks formed of broken bottles, broken spar, broken bricks, broken tiles, &c.; walks never intended to be walked upon, such beauties! Ah! well, I am not cockney enough to admire them.

Now, I will tell you what does come up to my idea of what a garden should be. I would have a garden like that at Belvoir Castle, in the spring, or, indeed, at any time of the year, but particularly in early spring. There all the ground is covered by plants which touch without growing into each other; there the plants are all in bloom, or coming into bloom; there are masses without sameness as in nature, where as your path winds amongst the trees you come upon a mass of Wood Anemone, or blue *Hyalinth*. You have variety and effect combined, yet without extravagance—lovely little plants, rarely met with, peeping here and there amongst their showy sisters. I shall never forget the effect produced by *Hyalinths* of different colours growing through a mass of *Arabis caucasica*.

But, pray, ye Editors, send some one capable of describing a garden to Belvoir in the spring, and let your readers know how to manage a garden so as to be always in full beauty, so that a place can be found for every favourite, old and new; a garden which does not require an acre of glass to furnish bedding plants by the thousand, or the purse of a duke to keep it up, but is equally adapted for a princely place like Belvoir, or the modest garden of the curate.

I have not the gift of description, and despair of conveying any adequate idea of the effects produced by Mr. Ingram, with materials within the reach of any person of moderate means. If Mr. Ingram would find time to tell others how to manage a garden as he manages the one under his care, he would be considered a public benefactor.—J. R. PEARSON, *Chilwell*.

ORCHARD-HOUSE FRUIT.

A BRAVE and faithful knight is "R., of S."—not more chivalrous was he of La Mancha when prepared to do battle for the charming Dulcinea; for will he suffer one word of detraction to be uttered against the peerless Orchardina? Do not her eyes shoot out such coruscations, that one is repaid all the outlay to sit and smoke one's cigar beneath her boughs as the house sends out its brilliancy of colour? Is there a bloom on any cheek so lovely as hers? And then when once—coy maiden that she is—she rewards you with a taste of her sweetness, oh! who dare say that there are any lips as sweet as hers? And will he not—nay, does he not—with vizor down (for I remember how he unseated some poor wight who would not allow him his incognito), and sledge-hammer uplifted (for he disdains a lighter weapon), advance to the charge against all who cannot see with his eyes or taste with his palate?

Here am I, a poor halting serving-man, for I dare not even call myself a knight, suffering from grievous bodily hurt inflicted by this trusty champion, because I ventured to fire off a little popgun, and to hint a slight expression of doubt as to the superexcellent character of the fair damsel whom he delights to honour. Alas! I have oftentimes been compelled to bite the dust; and every one who is not contented to go on in a quiet jog-trot way, and who will occasionally utter his own opinions without tacitly submitting to be guided by others, must lay this to his account. But I generally try to shake off the dust, and, if I have a little breath left, to try and say a word to show that I am not "kilt outright."

I think perhaps I ought to have used one word of limitation—namely, most practical men "whom I have met," and with that limitation I still hold to my former statement; and however glad to find that there are some whose acquaintance I have not the honour of having think otherwise and have experienced success, although I quite agree with Mr. Keane that "Duckwing's" success is a very qualified one, I must still hold that they are exceptions, unless, indeed, there be some circumstances not known which would alter the case.

I happened to meet the other day at Kensington a "practical man," (and I think my acquaintance with such is not of a

limited character), and who knows as much about fruit (I will not say as "R., of S.," for I stand in bodily fear of him), as any one, I believe, in the three kingdoms, always excepting "T. R.," and his word to me was, "You are quite right;" and then we had a little talk as to the native habitat of the Peach, and the scorching baking weather it has to endure when it is ripening, and how impossible it seemed to be to obtain in an orchard-house such a temperature. But whatever may be the theory of the matter, I never yet saw an orchard-house *pur et simple*—i. e., with the trees in pots without heat, and I have seen a good many, where the fruit was worth a "dump." I only have been unfortunate, but such is the fact; and I can only say that if I had it in my power to erect one 40 feet long to-morrow, I would prefer to have a house half the size and heat it, so as to get a few really good and palatable fruit. But all these are assertions *pro* and *con.*, and I think it would be very desirable to have something decisive on the point.

I am not a fruit-grower, nor do I pretend to know much about the subject; and so perhaps "R., of S.," will say, "*Ne sutor ultra crepidam*," and let me stick to my last. I have, however, an interest in the matter, and would willingly see something more than mere assertions. To gain this end I would propose that a prize be offered for the best six Peaches and six Nectarines; and that size be not considered a material point, but the merits to be entirely in the matter of flavour; that "R., of S.," send his very best, and let them be put into competition with the same numbers of fruit grown in a Peach-house; and that five members of the Fruit Committee be requested to adjudicate at some period, if possible, when the fruit can be procured from both sources. If those who are interested in the matter think this is a proper way of deciding, I shall be very glad to contribute my quota towards making up the amount of the prize.

Mr. Keane has so well put the matter in last week's JOURNAL OF HORTICULTURE, that I do not think it necessary to add more than this—that had the advocates of orchard-houses been content with moderate assertions we might well have borne with them; but it is the extravagance of their statements that has made practical men—I again use the term, though "R., of S.," says "*soi disant* practical men"—so strong in their statements.—D., Deal.

FRUIT-GROWING—ORCHARDS OR ORCHARD HOUSES?

BRING one of the parties of whom the advocates of orchard-houses have made particular mention as being opposed to their views, I should not have again entered on the subject had I not found that some of my views were imperfectly understood; while the courtesy of Mr. Pearson and the gentlemanly tone of his letter alike call for a reply. Although we may still differ in opinion on the subject of fruit-growing, the manner in which Mr. Pearson has put forth his views disarms opposition of everything personal or hostile; and although I fear I cannot promise myself the pleasure of partaking of his hospitality at the time his orchard-house fruit is ripe, nevertheless I am willing to believe it is good. But supposing I admit that orchard-house fruit often is good, and I have no doubt that it is, can any impartial judge say that better fruit has been grown in pots than has been grown in the ordinary way?

My argument hitherto has been that the system is very "expensive and uncertain," not that fruit cannot be so grown; for, as I said in my former letter, I believe that good Wheat and Barley could be grown in pots as well as Pears and Peaches. But is it expedient to do so when other and better ways exist, whereby corn and fruits can be had in greater abundance and at infinitely less cost?

Mr. Pearson's letter, however, calls for further remarks bearing on the subject of trees in pots; and although I have no doubt but the very able writer in THE JOURNAL OF HORTICULTURE, "D.," of Deal, will reply to those who have found so much fault with him and the worthy gardener at Winchester, I will explain a few of the reasons which have led me to take the view I now do on the subject of growing fruit trees in pots.

I believe I have, in a former article in this periodical, stated that my first acquaintance with Peach trees in pots was made upwards of thirty years ago. A gentleman, extremely fond of gardening pursuits, and one of the first to introduce the curvilinear iron-barred hothouse into general use, took a fancy to try Peach trees in pots, and being ably seconded by his energetic gardener, they produced and ripened their fruit in exactly the

same manner as they ripen now—sometimes plentifully and moderately good, and sometimes a failure would occur. I am unable to say how many years this had been done before the time I speak of, but it was not new by any means in 1832. This was, however, the first successful attempt that I had seen at growing fruit trees in pots, and ripening the produce.

Some few years after that, an intimate friend of mine came as gardener to a gentleman fond of such novelties, and, amongst other features, there was a glass house set apart for a certain purpose in August; and, to make the most of that house during the early summer months, Peach and Nectarine trees in pots were introduced, and crops of fruit obtained in greater or less abundance, as the season and other circumstances determined. These trees, be it remembered, were all in pots, and were of different shapes and sizes; some of them were trained flat to fix against the back wall as dwarfs, and others as riders or standards at the same place, while some were simply kept in bush-fashion to occupy the floor or body of the house. Here, then, more than twenty-five years ago, was an "orchard-house" in the sense in which that term is now applied; but at that time a less ambiguous name was given to it.

Continuing the narrative, I may say that when the time came for removing these trees out of doors, which for other reasons it was necessary to do immediately after the fruit was gathered, they were placed in a sheltered but sunny corner, and the pots were carefully wrapped round with hay or straw bands somewhat after the fashion of the foreign liqueur spirit-bottles. This wrapping-up prevented the sun from heating the pots and injuring the roots, and the pots were sometimes so wrapped round before taking them out of the house, as it was found that plunging them always encouraged rooting-through, and was hurtful when the trees had to be removed.

Having had an opportunity of seeing these trees almost weekly, and sometimes oftener than that for two or three years, I could speak as to the result; I had, however, lost sight of them since 1841, when I accidentally met my old friend last summer, under whose care the trees in pots had continued some ten years or more, ending, I think, in 1847. When the subject of the trees in pots was mentioned, "Ah," he said, "they were a great deal of trouble to me; they were the worst things I had to manage, but I often had fair crops, considering the trees were cramped up in pots." "But," I asked, "how did the produce bear comparison with that of an ordinary Peach-house?" My friend shook his head, and replied that he would much rather manage four Peach-houses having the trees planted and trained in the usual way, than the one with the potted trees in it; and the produce of the latter in the best season he ever had fell far short of what ordinary-trained trees ought to have borne in the same sized houses, while in general the crop, taking quantity and quality together, was less than one-fourth what a good Peach-house would have been.

This is the practical experience of one who had tried the matter fairly for a number of years before the high-sounding title of "orchard-house" was bestowed on structures intended for this class of horticultural produce. I should much like my friend to have given to the world his views on the subject, but the above are the main particulars. It thus appears that Peach trees in pots are not by any means a recent introduction, while the plan of growing such trees in bush-fashion under glass, but planted in the ground, is much older still. The first Peach-house I ever remember having anything to do with in this way was some thirty-five years ago, and the trees were then old ones; they were much less manageable in every point of view than trained trees, and the fruit were no better.

I believe that I related much of the above in a former discussion on the merits of the orchard-house system of growing fruit trees in pots; I also mentioned having at some time of my life had a few trees in pots myself. The last of these, however, was some fifteen years ago, and finding they did not produce anything like the quantity of good useful fruit that could be had by planting them out, I adopted the latter plan. I have, however, not been an indifferent spectator of what has been going on in that way; but like our able and accomplished writer "D.," the usual tale in July or August when the fruit ought to have been ripening was that some awkward apology had to be made for its "falling-off" some time before; the trees had bloomed beautifully, and set well, and all went on well until "somehow or other the fruit took to falling-off, and nearly all are gone." Such is the story one often hears, and I ask Messrs. Rivers and Pearson if they have not often received similar complaints?

One of the most fortunate growers of Peaches in pots candidly told me that his success entirely depended on his allowing his trees every year to root into the ground, which roots he partly cut back the following winter, thereby following out a system of annual "root-pruning." But I ask, Is this growing the fruit in pots? I am willing to believe that Mr. Rivers and Mr. Pearson each grow some good fruit on trees in pots, and I am glad the latter intends to submit some of his fruit to the test of a public show. The complimentary approval of individuals who may be kindly treated by an hospitable host ought not to be taken at more than its worth; it is always much more pleasing to speak favourably than otherwise, and few would act the ungracious part of finding fault with what was kindly placed before them. But even assuming it to be proved (which, by-the-by, has not been yet done) that a fruit grown in a pot is as good as one grown against an open wall, it is only like proving that a silver spade is as good as a steel one; for the costliness of the one mode of growing fruit as compared with the other is about on a par with the relative price of the two tools. The advocates of the silver spade may call Mr. Weaver and myself prejudiced, antiquated, and so forth, because we cannot see the merits of the silver tool, but that does not prove that the silver tool is best. This simile I will, however, further explain, so as to place the relative trouble of attending to plants in pots, as compared with those planted out, in a true light.

On the terraces at Linton we have been in the habit of placing groups of plants for display during the summer season. These plants are all in pots, and consist mostly of Scarlet and other Geraniums, Lobelias, Fuchsias, and such like, to the number of about a thousand, and they are all in pots. Now, though we have a great many thousands of the same kinds of plants planted out in the beds, the attention those in pots on the terrace require during the summer months, in watering and so forth, very far exceeds all that is given to the others; for although I did not record how often the plants in pots were watered, it could not be less than eighty or one hundred times from the early part of May to the end of October. Now, plants of the same kind planted in beds had water only once—viz., at the time of planting.

This is one example of the difference in trouble between plants in pots, and those in the ground, and it may very appropriately be applied to fruit-growing. The simile will bear itself out pretty well, but those who dislike such a comparison I will meet on their own ground, and give another example.

This time we will take Pears, which I see Mr. Pearson does not patronise, but Mr. Rivers does. Well, last summer I went to see some trees in pots that belonged to a gentleman who is ardently fond of gardening, and which had been received some time before from a famed establishment for such things. On Plums, Peaches, and Pears, there was, however, very little fruit; but one Pear tree, a Marie Louise, had three fruit upon it, and the gentleman seemed in high glee at his success. Some time afterwards he sent me word that they had all three ripened. This was about the time that I had some of the same kind ripe also, and I sent him half a dozen specimens to compare them with his own, and he candidly sent me word that mine were the better flavoured. Now, the three fruit the gentleman produced on his potted tree cost him long and close attention in watering and the like, and this was the most successful tree in about forty, taking all kinds together, while those I sent him were taken indiscriminately from a batch of thirty or forty bushels of the same kind which had been grown on open standard trees in a grass orchard, and the gathering of the fruit when it was ready was all the attention the trees had received the whole year. Now, this case might have many parallels, but I merely place it before the general reader as bearing on Pear-growing. I may, however, mention another circumstance connected with this Pear, which may not be generally known. The trees on which those in question were grown, were ordinary standard trees, middle-aged, and which only received a pruning or thinning of the branches once in five or six years, and in some seasons they have been more prolific than last year. Now, we have the same kind of fruit on a wall with an east aspect, and the Pears become much larger, but bear no comparison with the fruit from the open standard in respect to flavour. The latter have a more russetty appearance, and attain a nice size for table. The above is a good example how necessary plenty of air is to perfect our hardy fruits, as other Pears as well as this one are better on the open standard than on the wall, and I can hardly conceive how any fruit ripening under glass can be as good as the same kind is when ripened in the open air. Observe, I say ripened,

I do not mean starved into a premature perfection, or rather imperfection. Strawberries forced are inferior to the same ripened in the open air, and the same may be said of Peaches and Nectarines generally, and to improve the flavour of the latter they are invariably treated to the greatest circulation of air the house will admit of. Such, however, is the general way of managing those in Peach-houses. In orchard-houses the treatment is much the same.

Having carried the above remarks to a greater length than I intended, I have only space to reply to your correspondent, "R., of S.," who says, "that the flavour of fruit is entirely under the control of the gardener." I will, however, ask him the simplest of all questions, one possibly beneath his contempt. How are Gooseberries to be grown near London so as to be of as good flavour as those produced in Lancashire? I am not too old to learn, and would like to know much more about the flavour of fruit than I now do, and certainly would consider myself a very clever man if I had it under my own control. I would waive all opposition to orchard-houses, and give "R., of S.," the credit of being an oracle, if he would only put me in possession of this secret. With regard to the article of "Duck-wing," it is needless to say much, since the drift of his argument is on the side of "D." Mr. Weaver, and myself, for he acknowledges failing with four out of the six kinds of fruits he attempted to grow; but as he candidly acknowledges knowing only the orchard-house cultivation, and thinks himself successful by managing two out of the six fruits he commenced with, it would be ungracious to deny him the amount of credit he deserves. At the same time I would just say, that before he again decides on the merits of contending objects, he ought to do something more than merely make himself acquainted with one of them only. The readers of THE JOURNAL OF HORTICULTURE most likely have heard plenty of this orchard-house dispute, and certainly any article on this subject loses much of its value if the writer does not give his own name and address.—J. ROBSON.

ORCHARD-HOUSE TREES.

"I do not like thee, potted tree,
The reason why I cannot see—
But I don't like thee, potted tree.
I like thee dearly, Prejudice,
Thy narrow path is very nice—
I love thee dearly, Prejudice!"

As Mr. Keane dabbles a little in poetry, I am tempted to give him the above paraphrase from Wordsworth, which I have no doubt he will think apposite and interesting.

But to go to the matter of fact of orchard-houses. I could not help feeling some little surprise on reading Mr. Keane's last article on the subject, for I cannot see why he should have taken the trouble to write several paragraphs without giving us a particle of information. He has, it is true, given us three quotations, one poetical, one doggerel, and one prose—all most remarkable for their bearing on the subject; but why does Mr. Keane, who is one of your constant contributors, and whom we, your readers, think bound to give us sound information, why should he employ that unsatisfactory phrase, "we are told?" He may just as well insert in his weekly calendar, "We are told that at Brentford Melons are grown in mud in the open air." Would not your readers say, Why not go and see? and so I say, Why not go and see? Sawbridgeworth is but one hour's ride, and there he may see Apricots, Plums, Pears, Cherries, Peaches, and Nectarines, all growing in a climate apparently well adapted to them.

"We are told" may do very well for a reporter to a newspaper, but no writer on gardening should employ it, unless it relates to something extraordinary—such as, for instance, "We are told that in the moon Melons are grown in boiling water, and are always remarkable for their tender flesh." Well, we should let that pass, because we now know that a journey to the moon, if we may depend on Mr. Glaisher's experience, would be a cooler to a lover of tender-fleshed Melons.

With regard to perseverance being based on well-organised plans, referred to by Mr. Keane, the culture of trees in pots is most firmly based; for who that has travelled with their eyes, and, above all, their minds open—not walking in the narrow, "nice" path of English prejudice—could avoid deducing from Orange-tree culture in tubs, the trees kept in vigorous health by annual top-dressings for hundreds of years; for the Orange tree at Versailles is four hundred years old, and many others

upwards of two hundred; I say, who, with any activity of mind, would not have at once asked himself—If one species of fruit tree can be thus cultivated with success, why should not all kinds?

Again: besides Orange trees, the observing traveller may see in all parts of the Continent, except the extreme south, Pomegranates, Loquats, Bays, Laurustinuses, Myrtles, and many others, all of great age, but still full of health and vigour, and all growing in tubs, and kept in luxuriant growth by surface-dressings.

The truth is, there is no limit to this mode of culture. Potted fruit trees seem to increase in health as they increase in years. My Apricot trees in pots, some of them now twelve years old, are more robust and fruitful than ever; and in the year 1883, when they are being viewed, the young gardener of that day will say, "Is it possible that this mode of culture was objected to by men of a decent calibre of intellect?" and they will surely believe that Jasper Standstill, M.P. for Dulltown, had numerous supporters among the gardeners of 1863.

I must, however, candidly confess that I fully excuse Messrs. Keane & Co. for their peculiar mode of thinking. I have imagined myself to be a thoroughbred and competent gardener, and I have, in imagination, placed myself in what is called a first-class place; walls covered with well-trained trees; every shoot in its place, and all under my sole direction. Well, in the course of time, the system seeming quite perfect, my mind becomes so thoroughly imbued that I listen to a plan of growing Peach trees as bushes, pyramids, and half-standards, without training them flat to a wall or a trellis, as some kind of romance (like Dana's adventures in Marquessa, truth-like, but not true), for I find it impossible to tolerate the idea of growing Peaches without crucifying the trees against walls. Such I believe to be the mode of thinking of many good and clever men: their walls have enclosed their gardens and their minds, so that their gardens have been to them a sort of happy valley, in which, if Johnson could have known them, he would have placed Rasselas.

I hope I have shown that there is really no credit due to the originator of orchard-houses. The idea is hundreds of years old, and he must have been very dull not to have caught it up on the continent. The only wonder is, that such men as Mr. Keane, Mr. Robson, and many others were not in the field before him. It seems almost incredible that they should have seen trees cultivated in pots and tubs by surface-dressings for years and years, and yet not have promptly extended the system to all kinds of fruit trees.

The author of the "Orchard-House," therefore, may think himself a fortunate man to have escaped such rivalry; for who knows, the book instead of now being on the eve of its eleventh edition (eleventh thousand), would, perhaps, after the first have been forgotten?

Mr. Keane can, perhaps, inform us if any pamphlets were published on Polmaise heating and Vine-coiling, and what success they had. I only seem to remember those matters as the little charlatanism of the day. I have, in common with many others, many thanks to render to Mr. Keane for his "Out-door Gardening," a capital book which is always on my table, and without which I should not know when to sow Cabbages or even Spinach.

I observe that Mr. Keane has used a famous political phrase—*coup d'état*. This is, undoubtedly, a clerical error; he intended to have written *coup d'éclat*, which is much more apposite. Following Mr. Keane's example I must conclude with a doggerel rhyme—

"When'er you write on knife or spade,
Confiné yourself unto your trade."

—R., of S.

BLOWER DROPPINGS.

SOME time ago I read a question in this Journal about the qualities of what goes here by the above name. Blower droppings are the refuse of Cotton seeds and scales of Cotton seeds, along with other vegetable substances, which come from the Cotton in its first process of manufacture. I have used much of it, and know many more in this neighbourhood who have used it rather extensively.

One friend says, that mixed with a little soil and a good layer of it put under the mixture, it will grow better Early Radishes than anything else. Another friend, who is no mean gardener, says it is equal to cocoa-nut fibre refuse, and he has tried both.

I have used it in a mixture of soil, manure, and sand, in

about equal quantities, and I find it very good for Stocks, Asters, and Calceolarias. Used half-and-half with manure, it makes a first-rate compost for growing Celery.

It is very plentiful about here at present, on account of there being so much Surat Cotton used at such mills as are working.

It heats well, but does not retain its heat a long time.

I have a farmer friend, who says that, mixed with manure, it will produce twice as much grass as manure will by itself.

It can be had cheap enough, and I must say it is very useful in any garden, especially where the soil is short of vegetable matter.—JOHN HAGUE, *Gardener, Gridby Lodge, Ashton-under-Lyne.*

THE BROWN PEACH APHIS.

WERE I inclined to make an assertion without having made use of my eyes to gain experience, as too many writers are apt to do, I should say this aphis must be a recent importation, but it has, very probably, been with us a long time. Of late years the cultivation of Peach trees under glass has increased to an enormous extent, and this species of aphis seems to have increased in proportion.

It differs from the Peach aphis of the various works on gardening, for that is described as being green; and another difference exists—the green aphis attacks the young shoots in spring and summer only, but our brown enemy is often found on the bare young shoots of the Peach tree in November and December, and this was why the Gishurst compound was recommended as a winter-dressing. It is certainly a most effectual remedy, and kills the aphides and their eggs; but owing either to its being made of different degrees of strength, or from some other cause, it has undoubtedly been occasionally productive of mischief in weakening the blossom-buds and causing them to drop off: much caution should, therefore, be used in applying it. In 1858 and 1859, 6 ozs. to the gallon of soft water were infused, and the mixture was applied freely. Its effect as an aphis-killer was excellent, for not an aphis or an egg was left, and the trees were clean all through the ensuing summer; but in December, 1860, and again in the same month in 1861, with an infusion of the same strength, the trees remained perfectly clean, but a large number of blossom-buds dropped off: whether this was owing to any inequality in the strength of the compound or from what other cause I have never yet been able to understand. It shows, however, that caution should be used in applying this excellent aphis-killer.

The month of December, when the buds are quite dormant, is the most advisable season for washing Peach trees under glass with it, and 4 ozs. to the gallon of water the proper strength. Last December, 1862, my trees were so clean and healthy that I did not dress them as usual with the compound. Their blossoms this spring have been strong and beautiful, and have set well, but within the last fortnight the brown aphis has made its appearance on many trees. Its increase, as stated by Mr. Fish, is almost magical; for in one night a shoot on which none could be discovered the day previous will be a brown mass of aphides.

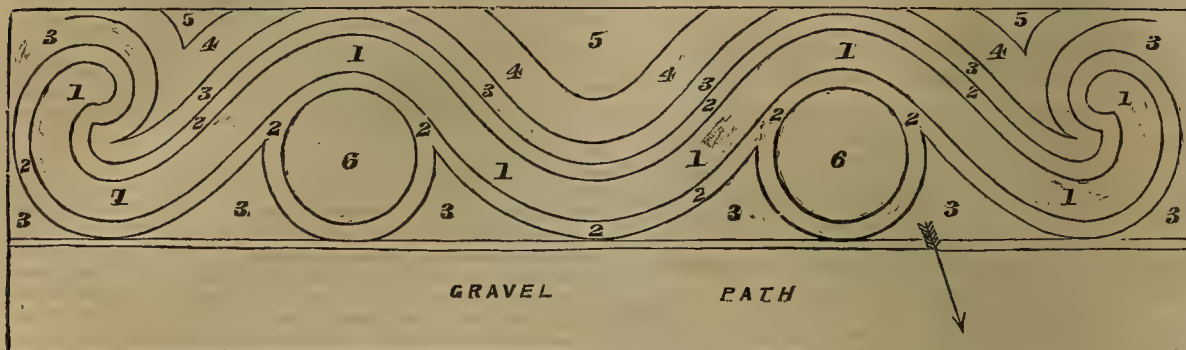
I inquired to-day of the young man who has charge of my large orchard-house, 100 feet by 24, in which there are some hundreds of Peach trees, if he could keep the brown aphis down without fumigation. He said, "Yes, by looking over the trees rigidly." The following is the remedy applied—it is most satisfactory, and has not the least injurious effect either on the young leaves or young fruit—4 ozs. of quassia chips boiled ten minutes in a gallon of soft water, and while cooling dissolve in it 4 ozs. of soft soap; the mixture applied with a small painter's brush. So efficacious was this found last year on trees out of doors infested with aphides, particularly Plums and Cherries, that this season I have ordered 56 lbs. of quassia chips from a wholesale druggist. As Mr. Fish suggests, a few lines on the natural history of this apparently new species of aphis would be of much interest.—T. R.

THE SEASON IN THE LOTHIANS.—What a splendid spring we have had here! Apricots on open wall are as big as pigeon eggs.—D. THOMSON, *Archerfield.*

EARLY POTATOES FROM CORNWALL.—Several parties are now (April 23) busily engaged drawing (digging-up) Potatoes in the neighbourhood of Penzance for the London market, and the crop is said to be above the average.—W. P., *Cambourne.*

FLOWER-BORDER.

PLAN FOR RIBBON-BORDER UNDER A WALL.
32 feet 6 inches.



1, *Perilla nankinensis*, 1 ft. broad.
2, Variegated Mint, $\frac{1}{2}$ ft. broad.

3, *Lobelia speciosa*, $\frac{1}{2}$ ft. broad.
4, White Candytuft, 1 ft.

5, Nothing.
6, Roses.

7, Box-edging.

"MUDDLER'S" questions are—What do we think of the form of the border? what of the planting in unfavourable circumstances? and what improvements can we suggest?

The main features of the curved lines of the border we cannot but approve, as in borders more than ten times your length we have followed something of the same plan for two years. This season we think we shall revert to straight lines instead, for a change, though it does not look so artistic. As far as effect is concerned, there is not much difference in the two systems. The curved lines are, perhaps, the best as you walk along the side of your border, and show more intricacy and contrast of colour in whatever direction you look; but then they do not tell so well when you stand at either end and look along them as straight lines do, even if all is done well, and the heights are properly arranged. If there is a fault in the arrangement of heights, it will be bad enough to look at it from the sides of the walk; but it will be a perfect jumble if looked at from either end. This, however, has nothing to do with the mere ground plan of your proposed lines and two circles in front, with which we are very much pleased, as it shows how many tasteful ways there are of doing the same thing. The sweeps at the ends and the circles in front give an artistic charm to the waved or serpentine lines of colour. There is just one thing which we think would improve your plan, on the system you have adopted, and that is a straight line in front, and a straight line at back, to harmonise with the straight line of your walk and the straight line of the wall. If you had not room otherwise for this, we would make one waved line the less. It would give a completeness to the design, which it at present wants, and more especially if there is any space for path or otherwise between the wall and the triangular waved spaces at the back, marked 5. These straight lines would be the setting for your picture—the frame, so to speak, which would make you independent of trusting for that either to the wall or mere edging at the walk. For instance: there are your curved sweeps, 2, that touch the walk, filled with variegated Mint, and there are triangular pieces between them and the circles, 3, planted with *Lobelia speciosa*, which, except in the curves in front of the Mint, will do admirably; but then just think of a straight line of the *Lobelia* taken all the way, if Box-edging is next the walk, or *Cerastium tomentosum*, if of grass, and you will perceive what a completeness would be given to the setting. Mind, that is only our opinion. Some people might like it better as it is.

Now, we are well aware of your difficulties in making a very showy border on a north-east aspect; but if you have tried the *Perilla* and *Lobelia*, and find them answer, we have no doubt that *Calceolarias* and *Scarlet Geraniums* in pots would flourish tolerably. We must say, however, that we like the plan of your border better than the proposed planting. Without taking objection to the proposed colours, there is but little attempt made to regulate them as to their heights. Last year, in some of the fine borders and clumps about London, the outsides were the highest, and the inside or centre rows were the lowest; and some good friends, and ladies amongst the number, have told us how nice they looked, and that they would imitate them next year.

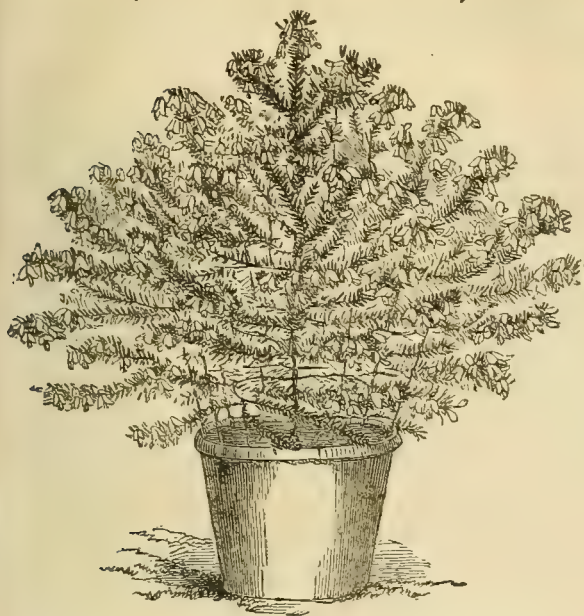
Our own opinion is, that in these cases which were thought of so favourably, the planters had been disappointed, and that they were rather vexed about what other people in search after novelty looked upon as an attraction. Now, if such be your views, we can see little wrong in your planting. But if you have any idea that in a border in front of a wall the rows, to be seen, should have a suitable relation to each other in height, then we do not see how your proposed planting is to be defended, unless you make everything of much the same height by layering, pegging, &c. One incongruity we may likewise mention, and that is the perpetual character of the *Roses* in No. 6, whilst all else would be only of temporary duration. Looking on the two circles, No. 6, as main features, and presuming that they are to be filled with low-growing China *Roses*, they will not only look well, but your surrounding them with the belt, 2, of variegated Mint, will give a completeness to them, and remove the objection to the centre bed of "*S. E. L.*" the other week. Then, as already stated, the triangular waved spaces, 3, of *Lobelia speciosa*, are all right enough, and so would be your waved line, 1, of *Perilla* behind all these; and we should not greatly find fault with the waved line, 2, variegated Mint behind the *Perilla*, because we could prune down the *Perilla*, and let the back row of 2, Mint, grow to overtop a little the *Perilla*. But how are we to manage the back row of 3, of *Lobelia* again behind these, which naturally will not rise above a few inches? and then, again, the broad line of white Candytuft will be a blaze while it lasts, but it will seed about July or August, and leave nothing to look at. You think it will be a foot in height, but then to give it its due, 2 and 1, the Mint and the *Perilla* should not be higher than the *Lobelia*, and thus much of the interest of the sprigs of the *Perilla* would be gone. Besides, with the exception of, we may suppose, crimson *Roses* in No. 6, the whole of your border will consist of cold colours, blue, purple, white, and white and green.

Now, on that principle we would allow 3, 2, 1, 2, counting from the walk, to remain as they are, only the back, 2, to grow taller to overtop the *Perilla*, and then the 3 behind we would fill with dwarf blue *Ageratums*, and 4 with double *Feverfew*; and 5, unplanted, we would fill with strong crimson *Roses*, or simply with masses of *Lobelia cardinalis*.

But, again, were we to please ourselves more, we would do 6, 3, 2, 1, as proposed, and keep down the 1, *Perilla*, make the second 2 behind it not Mint but yellow *Calceolarias*, or yellow *Chryseis* or *Eschscholtzia*; 3, behind it, *Ageratum*, dwarf, or *Delphinium formosum*, planted thickly, and half of the plants cut down to a few inches in height; 4, white double *Feverfew* done the same way, and allowed to grow to the full height; and 5, and row all along, *Salvia fulgens*. This would give you gradation in height as well as change of colour. If such things as *Catchfly* are used, it would be well to sow in patches now, and again in June, and thus the bloom might continue to the end of the season. *Lobelia cardinalis*, well dunged, would also be brilliant for 5, or even a row in addition all the way at the back. All such borders should be changed every year.—R. F.

GOMPHOLOBIUM BARBIGERUM.

(BEARDED-KEELED GOMPHOLOBIUM.)



Class, Diadelphia. Order, Decandria. Nat. Ord., Leguminosæ.

GENERIC CHARACTER.—Calyx, five-parted, nearly equal. Carina of two concrete petals. Vexillum, broad, spreading. Stigma, simple. Legume, many-seeded, nearly spherical, and very blunt.—(*Mag. Bot.*, vol. xii., t. 19.)

SPECIFIC CHARACTER.—Plant, an evergreen shrub. Stem, erect. Branches, angular. Leaves, alternate, nearly sessile, trifoliate; leaflets linear, rather acute. Pedicels, furnished with minute bracteoles. Flowers, about 2½ inch in length, handsome, golden yellow. Keel, bearded along the suture, Vexillum, large, longer than the calyx and keel. Pods glabrous.

It is recorded in botanical catalogues that *Gompholobium barbigerrum* was introduced to this country in 1824; but it is questionable whether, if this be correct, it was not again soon lost, as we have no account of it until about three years ago. But however it may have been with respect to its first introduction, it has certainly now found its way into many collections. It is a native of New Holland.

Under cultivation nothing beyond the treatment bestowed upon greenhouse plants generally is required. It is a robust grower, particularly when compared with *G. polymorphum*, and some others. Plants in very fine condition were exhibited in London in 1847, by Messrs. Lucombe & Pince, of Exeter, who are said to have been the first to introduce the species to this country. A specimen grown by them had become a large bush, and was profusely decorated with its fine yellow blossoms. It is easily increased by cuttings.

Mrs. Lawrence's extensive and famous collection of plants, at Ealing Park, furnished in the spring of 1850 the specimen from which our engraving was prepared.

The soil requisite for it is a mixture of sandy loam and peat, and the plant must stand in a light airy greenhouse, like other New Holland plants, and receive a liberal supply of water during summer, but in winter must be watered with care.

The generic name is derived from *gomphos* a club, and *lobos* a pod, in reference to the shape of the seed-pods.—(*Paxton's Magazine*.)

MANAGEMENT OF SPRING BULBS AFTER FLOWERING.

As most amateur gardeners desire to make the best use of their flowering bulbs in future years, may I ask you how they should be treated after removal from the house to the garden? It is a story you have often told, so you may be loth to burden your pages with such elementary work.

The plan I have always adopted, and which you, I believe, have advocated, is, after the beauty of the flowers is over, to cut off the flower-stalks, and carefully to plant the bulbs in some spare ground; then, when the foliage is completely dead, to take them up and to store them in bran or sand, that in the autumn they may be put into the border. A friend, who is a very successful

florist, told me that I was wrong in thus placing them where their growth might be prolonged; that the roots spent all their second growth, and would rot away; and that after their flowering was over they should be gradually dried-off, and after a while the earth shaken from them. He, moreover, gave as a reason that the future blossom was forming while the bulb was at rest.

Now, I presume the physiology is, that so long as the leaves remain green and vigorous the roots are in action, and storing up materials for future growth, that the longer the leaves continue in vigour the better is the promise for the future. There can be no doubt that the finest blooms of the larger *Narcissus* are to be gathered from those roots that have not been moved for years; the bloom is larger and more vigorous, though later than when the roots have been potted. The same rule obtains with the *Crocus*, with *Gladiolus*, and the common *Narcissus*; whether it is applicable to *Hyacinths* I do not know, as they were removed to make way for other plants.

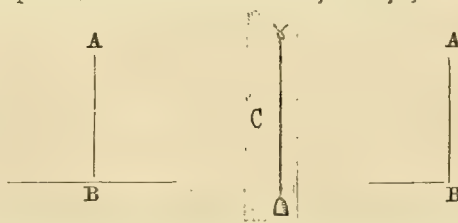
Acting on your suggestion, last autumn I put some of my Hyacinths into a heap of mould, and when the bloom was quite large I carefully lifted them into pots, using one-third coco-nut fibre refuse and two-thirds maiden loam; they did not flag at all by the removal. This spring having been so exceptionally warm and free of frost has rendered this more applicable than in ordinary seasons. The blooms of these have much surpassed those more carefully managed in pots, and covered with ashes before they were brought into the house.—B. J. S.

GEOMETRY APPLICABLE TO GARDENING.

(Continued from page 295.)

THE line also receives various denominations, according to its position and properties.

A perpendicular is a right line, that is made or expressed by the fall of a plumb, or by the elevation at right angles of any line upon the middle or end of another, as is A, B, and C.



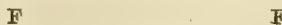
A line horizontal, is a line of an equal poise, which inclines equally on the one part and the other, as D E. In gardening it is generally understood to be the basis or bottom of a terrace, slope, &c., though it is properly any level line, and may as well signify the top of a terrace, or any other plane, or dead level.



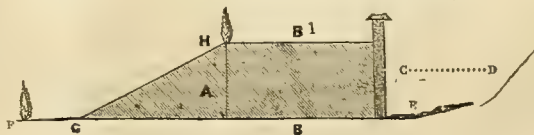
An oblique line is neither horizontal nor perpendicular, but sloping as G H , and may be more or less steep, as seen in the slopes of ramparts and terrace walks. This line is called the hypotenuse, when we speak of artificial triangles. Every slope from rampart or terrace is formed by a triangle, though the horizontal line and the perpendicular be unseen. G H is the hypotenuse or slope line; B , horizontal; A , perpendicular.



Lines parallel are those that are of equal distance from each other, which, though they are extended never so far, are neither nearer nor farther off from each other, as are the lines F.



These lines are all demonstrated in the accompanying figure taken from a celebrated author to show one form (and we think



an unfortunate one), of a terrace. *A*, is the unseen though not less real perpendicular line. *G B*, is the natural or made horizontal line, on a plane with the horizon. *B B*, are parallel lines. *B I* may be supposed to be a level horizontal line raised artificially as the surface of a terrace. *G H* is a sloping hypotenuse line in the form of a bank on one side of that terrace; *C*, an architectural perpendicular line bounding the other side of the terrace; *E*, a continuation of the horizontal line *B*, either natural or made artificially to give relief to the perpendicular *C*; *D*, a natural slope of the ground forming the irregular hypotenuse line to another triangle.

We have said that this figure, though illustrating these lines, is as to the position of a terrace unfortunate. Terraces are most commanding when they join a mansion, and when the ground slopes from them instead of down to them. In such cases earth for the purpose can easily be obtained, and the whole of the excavations for foundations and cellarage, even if there are no offices below ground, can be rendered effectual for this purpose instead of being carted away.

A terrace walk will also be very effective when made horizontal along the sloped line of a hill, with a steep ramp, as *G H*, in front of it; but we should think it rather strange if for forming it we were to dig a ditch, as at *E*, behind it, out of the rising ground *D*. For what these lines represent we can see no place whence the earth to form the terrace is to come from, except from the small space above *E*, as represented by the dotted lines *C D*. Suppose that a terrace is made in such a position, there is nothing for it but carting from a distance and using the foundations and cellarage of the mansion for such a purpose. A terrace should never be commenced without calculating the yards of solid hard-rammed soil that will be required, and whence that soil can be easily obtained. If the soil at any one part should be raised from a yard to two or more yards in height, it matters little what the bottom layers may be—brickbats, rubbish, clay, anything provided it be well rammed, and if flower-gardening is intended, there be from 18 to 24 inches of good soil on the surface. If grass only is wanted, then the half of that will be enough. The layers of soil should never be above 4 inches thick before being well beaten, and the more they are wheeled and carted over, and rolled heavily as the work goes on, the better will the ground stand at the desired level.

Unfortunate as we judge the position of the line *B I* as the top of a terrace, there are many such to be found, and much admired by their possessors and friends; and no doubt they will always yield dry walks at all times and seasons. Two of these have already been noticed in these pages: one of them is between the lawn and the park in front of a palatial residence. Carry the horizontal line *G F* farther back through level lawn to the mansion, and carry the line *E* horizontally almost into the park, and you have one of these terraces. Let *F G*, *G H*, *B I*, stand as they are, but change the upright *C* into a slope like *G H*, and extend *E* to a good wide level as a pleasure ground, and you have an exact resemblance of the other. What they could have been made for, unless for getting rid of foundations and cellarage, we never could make out. Except for securing a dry wide walk, they are every way out of place in the circumstances. Suppose instead that the mansion was built on the sloping ground *D*, and that the upright *C* was a balustrade in front of it, how different would be the effect of *B I* and the slope *G H*. Here, too, we could see whence much earth would come for the formation of the terrace, and that close at hand. If such were the position of the house, then, though the sloping bank *G H* would do well enough, or be made more artistic by a steeper slope, a much better artistic and architectural effect would be produced by doing away with the slope, and having a perpendicular wall as at *C*. On the other hand, if the front of the house extended upwards from the perpendicular *A*, and the perpendicular *C* in front of terrace as now, and the upward sloping park as at *D*, then the horizontal *E* should not be wider than necessary for security, and as little would be done as possible to prevent the eye of a person on the terrace at *A* resting complacently on the park scenery at *D*.

(To be continued.)

SALE OF ORCHIDS.—Another sale of these took place at Mr. Stevens's rooms, King Street, Covent Garden, on Wednesday last, when the total amount realised amounted to nearly £500. The following are some of the prices obtained:—*Ardis Shroderi*, £16 10s.; *Cypripedium Lowii*, £20; *C. villosum*, £6 10s.;

Cymbidium eburneum, £15; *Saccolabium curvifolium*, £12 12s.; *Sobralia superba*, Woolley's variety, £10 10s.; *Cattleya superba* with twenty-two bulbs, £6 6s.; another plant of the same, £5; *Rodriguezia secunda* major, £5 5s.; *Phalenopsis amabilis*, £5 15s.

ORCHARD-HOUSES.

I CANNOT allow the controversy respecting orchard-houses to close without striking one blow in their defence. In 1860 I was advised to build an orchard-house, but I had so great a prejudice against trees in pots that I demurred. In the autumn of that year I went to see Mr. Pearson's houses at Chilwell, near Nottingham, and, although expecting little gratification, I was charmed. The famed gardens of the Hesperides with their golden fruit, which we read of in our youth, and the gorgeous descriptions of the "Arabian Nights," never warmed my imagination half so much as the reality of Mr. Pearson's orchard-house show. My scepticism vanished, and I became a convert at once, and a disciple of Pearson.

My house is 60 by 20 feet; it has no artificial heat, and the climate is, therefore, always pleasant, and one can walk in it without the, to me, disagreeable sensation which artificial heat communicates. My wife, and a labourer who knows nothing of gardening, but who has sense enough to follow Mr. Pearson's directions, are the staff. In the early spring we have a flower garden in the varied bloom of each description of fruit; and the bees we introduce to fertilise the bloom, work and hum away without annoying any of us. We watch the growing fruit with never-failing interest, and the only alloy of our pleasure is the gathering of it; for we can hardly help wishing that in all its beauty it might hang on the tree for ever.

When the summer is not entirely sunless we think the flavour of the fruit superior to that grown out of doors, because unchilled by frost, or too rapid changes of atmosphere, and it escapes the coddled flavour so general with fruit grown by artificial heat.

As regards quantity, the first year we had a fair crop, though many of our trees were small, and some of them maiden plants. Last year, notwithstanding the sunless summer, we had a good show on the trees, many of them bearing three dozen—they were thinned down to that number—fine fruit, and the smaller trees from one to two dozen each.

In size our Peaches were from 7 to 10 inches in circumference, and a Stanwick Nectarine we measured was 8 inches. We exhibited six of our trees full of fine fruit at our Horticultural Show last August, and they surprised and pleased both professional gardeners and amateurs. This year the fruit has set well, and there is every prospect of a good crop.

Into the mercantile part of the question I do not choose to enter; but if any one wishes for an enjoyable spot let him set up an orchard-house, and from the beginning to the end of the year it will afford him a never-failing source of interest.

I say "we," because I speak also for my wife, who is my head gardener, and joins me in all my love and praise of orchard-houses, and in a vote of thanks to Mr. Rivers who first introduced them, and to Mr. Pearson, who has spread the taste for them through the midland counties.—ABRAM BASS, *Moat Bank, Burton-on-Trent*.

SEAWEED AS A MANURE FOR ASPARAGUS, SEA-KALE, AND POTATOES.

AT page 258 of THE JOURNAL OF HORTICULTURE appeared a brief account of the good effects of seaweed as a winter-covering to Sea-kale, and also the query whether a similar application to Asparagus would be attended with equally good results. My own experience in the matter enables me to say that if the soil is dry and porous it may be used *ad libitum* and with none but good results. The finest Asparagus I ever saw, whether as regards size, quantity, or delicacy of flavour, was grown in a soil three-fourths sand, and this resting on a gravelly bottom. The beds had a thick covering of seaweed every winter, and had occasional doses of the drainings of the dung-hill in summer. This with a slight stirring of the surface of the beds in spring after the covering was removed, was all the management they ever had.

I have also used it as a winter-covering for Sea-kale in a way similar to that spoken of by "T. W. B.," only I had the sea-

weed removed from off the crowns of the roots early in March, and old barrels or Sea-kale pots put over them—a plan which I think is superior to that of your correspondent: firstly, because the Sea-kale is much more easily got at; and secondly, because it keeps the Sea-kale nice and clean, neither are the Kale shoots so likely to be broken, as from their crispness they are very apt to be.

In strong soils, however, especially if they are at all retentive of moisture, I should be very doubtful of its suitability as an application to Asparagus. I have never had an opportunity myself of experimenting with it in soils of this kind; but a gentleman, an amateur friend of mine, informs me that he had his Asparagus-beds thickly covered with it one winter, and the result was anything but satisfactory. The beds were very thin the following spring; and upon examining them large numbers of the crowns of the roots were found to be rotted to a perfect jelly. The soil in this case was a deep loam, not wet, but moist rather than otherwise. It is probable that a surface-dressing with seaweed would be more suitable for Asparagus-growing in strong soils, as has been suggested by the Editors. However, as it is only conjecture, perhaps some of the readers of THE JOURNAL OF HORTICULTURE who have had an opportunity of testing its value will favour us with the result.

One thing, however, is pretty certain—namely, that seaweed should always be used as fresh as possible, as there is a positive loss of nutritive matter if it is allowed to remain in a heap and ferment.

In dry soils it is also an excellent manure for Potatoes. I have had first-rate crops of this vegetable by the use of seaweed alone, and where it can be had in plenty, it may be dug into the ground for general crops.—J. DUNN.

THE ROYAL BOTANIC SOCIETY'S THIRD SPRING SHOW.

THIS, the last of the Spring Shows for the season, was held on Saturday the 25th inst.; and the display, as on former occasions, was excellent. The weather, too, so important a consideration in connection with a flower show, was highly favourable; the day having just enough of sun to make shade agreeable, and just enough of breeze to keep the atmosphere from becoming languid. Roses, cut and in pots, together with the miscellaneous collections of flowering and foliage plants, constituted the principal features of attraction; to which Cinerarias, Pelargoniums, and Azaleas lent no unimportant aid.

Roses in pots were in the highest perfection, especially those contributed by Mr. Turner, of Slough, Mr. William Paul, and Messrs. Paul & Son. Those from Mr. Turner were Souvenir de la Malmaison, Madame de Cambacères, Paul Ricaut, Paul Perras, and Chénédolé—all of which, as regards size and abundance of bloom, could not have been surpassed. Mr. W. Paul's collection of six were likewise magnificent, consisting of Madame Boll, Empereur de Maroc, Anna Alexieff, Paul Ricaut, Souvenir d'un Ami, and Charles Lawson, the last particularly fine. The same distinguished cultivator had also a nice collection of ten, among which Beauty of Waltham, Comtesse de Chabillant, Sénateur Vaisse, Victor Verdier, and Lælia caught the eye; but the remainder were almost without exception equally fine.

In Messrs. Paul & Son's collection were fine plants of Madame de St. Joseph and Souvenir de la Reine d'Angleterre; whilst in that of Messrs. Lane and Son, Paul Perras and Paul Ricaut were fine examples of those highly esteemed varieties. Mr. Cross, gardener to Sir F. Goldsmid, Bart., Regent's Park, likewise contributed a collection, in which Souvenir de la Malmaison and Général Jacqueminot, standing side by side, were of striking beauty.

Fine boxes of cut blooms, comprising nearly all the leading varieties, came from Mr. W. Paul, Lane & Son, Messrs. Paul and Son; and Mr. Treen, of Rugby, was likewise an exhibitor.

Collections of foliage and flowering plants came from Messrs. A. Henderson & Co., among whose plants were a large *Dracæna ferrea* and *Jacaranda filicifolia*, remarkable for its elegant fern-like leaves. Also from Messrs. Lee, of Hammersmith; F. & A. Smith; Cross; and from Mr. Smith, gardener to the Duke of Northumberland, at Syon House, who had a magnificent *Maranta zebrina*, an enormous *Latania borbonica*, *Azalea Triumphant* (a splendid pyramid of bloom), *Caladium bicolor* Madeira, also large and fine, and *Acacia grandis*.

Mr. B. S. Williams exhibited two collections, one being of

mixed foliage and flowering plants, the other of foliage plants exclusively. Among the former we noticed a magnificent *Cyanophyllum* and a remarkably fine specimen of *Theophrasta imperialis*. *Gleichenia flabellata*, *Vanda suavis*, with two fine spikes of bloom, and a nice pyramidal plant of *Azalea amœna*, in full bloom, were the most striking of the remainder.

Of Cinerarias there were several excellent exhibitions, the best coming from Mr. Lamb and Mr. Turner. Those from Mr. Smith, of Syon, and Mr. James, of Isleworth, were also very good.

In Pelargoniums, Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, had *Multiflora*, *Beadsman*, *Alma*, *Pline*, *Virginie*, all of which were in good bloom; also, a group of Beck's seedlings, of which *Princess Alice* seemed the finest. Mr. Turner, of Slough, had fine plants of *Clarissa*, *Spotted Gem*, *Phoebe*, *El Dorado*, *Vestal*, and *Pescatore*; and Mr. Cross was likewise a successful exhibitor.

Of Auriculas, the finest were from Mr. Turner, the kinds being Spalding's Metropolitan, Oliver's Lovely Anne, Maggie Lauder, Cheetham's Lancashire Hero, Meteor Flag, and Dickson's Duke of Cambridge. Mr. Turner had also a very interesting collection of sixty pots of the best varieties. In the collection of six sent by the Rev. H. Dombain, which was also excellent, Meteor Flag and Campbell's Pizarro were, perhaps, the finest. Good exhibitions of this flower also came from Mr. Holland and Mr. James, of Isleworth, the latter of whom had also six Alpines.

Pansies in pots were contributed in fine condition by Mr. James, who had also twenty-four cut blooms; whilst Mr. Bragg, of Slough, had a stand of twenty-four, and two stands of thirty-six each, as well as a pretty seedling called *Vesuvius*.

Of miscellaneous objects the most conspicuous was a group of seven magnificent Azaleas from Mr. Turner, of which Barclayana, Holford, and Chelsoni were particularly remarkable. Messrs. Perkins, of Coventry, again exhibited their truly unrivalled *Verbena Lord Leigh*. *Gloxinias*, both of the drooping and erect kinds, came from Messrs. F. & A. Smith; and one hundred blooms of different varieties of *Verbena* from Mr. Treen. Mr. James had fine herbaceous *Calceolarias*; Messrs. Dobson & Sons, Snowflake, a fine white dark-centered *Cineraria*; Mr. Turner, *Bougainvillea speciosa*, flowered in small pots; and Mr. Bull, of Chelsea, a large collection of new and rare plants, among which were a fine specimen of *Pandanus javanicus* variegatus, *Acer Negundo* variegata, with very ornamental white variegations; *Rhododendron Victoria Regina*, with very fine white flowers with yellow spots; a handsome red-veined *Pteris*; *Pogonia discolor*, from Java; and *Serissa fetida* variegata, the small deep green leaves of which were nicely edged with white. Lastly, Messrs. A. Henderson & Co., had *Rhododendron Edgeworthii*, the large white flowers of which perfumed the tent; and several nicely-filled flower-baskets, flower-vases, and pots of potteryware in various designs.

NEED NEW FLOWERS BANISH OLD FLOWERS?

ACCORDING to some writers, it would appear that the modern system of bedding-out and massing bright colours in the flower-borders engrosses the attention of the whole gardening world, and that the old-fashioned method of planting the borders with a heterogeneous mixture of herbaceous plants arranged in picturesque confusion has altogether died out. Those who entertain that opinion should inspect suburban gardens, and they will find numerous small gardens managed on the old-fashioned principle.

The amusing account given by "TOWN-BRED," of his first exploit in the study of old-fashioned garden lore, has brought to light two important facts:—First, That there are intelligent people in the world who are willing that old-fashioned border plants should not entirely die out; and, secondly, that the generality of modern gardeners seem to take very little interest in them.

There are many so-called gardeners who gird themselves with a blue apron, which gives them the appearance of knowing something about gardening, and who discourse eloquently on "Gereenums," "Ellytropes," "Verbinias," &c., but who are blissfully oblivious of such border plants as *Geums*, *Potentillas*, *Saxifrages*, *Veronicas*, and the like, and who would hear for the first time of such things as the *Fraxinella*, *Trollius*, *Gentiana*,

and the Hepatica. These plants are not fashionable now, and, as a matter of course, are not to be attended to: consequently there are few gardeners who are likely to know them by sight.

The only advice I can give "TOWN-BRED," is to invite all the gardeners and plantmen in the neighbourhood to look at his plants, and, if possible, to name them for him. One may be able to tell him the name of one, and a second of another, till in time he may learn the names of all; for each would be willing enough to impart what he knows, if only to show that he does know something; otherwise there is a work to be had which bears what I consider a high price, yet is not a dear work, it is "Loudon's Encyclopedia of Plants." There is also a work by Curtis, the title of which I forget. These would aid him considerably, if not effect all he desires.

What I should like to know is, the reason why the border-plants of other days are put aside for the sake of the more gay bedders. Are not some of them, at least, useful for massing? Cannot the same thing be done in the flower-borders as is often done in the kitchen garden—that is, can there not be crop and crop between? Supposing a border is to be planted with ribbons of different colours, when they can be put out with safety, why should the ground lie bare till the end of May? Could not a narrow ribbon of the Wood Anemone, and Anemone apennina, be planted, of course to remain? Their tops would die down in the summer, and the ordinary bedders would close over the spaces. They would come up and flower early in the spring, and take off that bareness from the ground which is the most disagreeable part of the bedding system.

There are, I believe, among herbaceous plants many that are adapted to massing, if not for the flower, at least for the foliage, or for their earliness, as in the case alluded to, but I cannot call them to mind at present. Yet I do happen to remember many a gay bed of Primroses which bloomed for three months in the year, and kept in good foliage during the rest; the same with Pansies and Daisies, and Polyanthus and other dwarf plants, which bloomed in a style that would not disgrace the gay beds of half-hardy plants of the present day.

I have a great fancy for the common Anemone, and have seen masses of it that were worth going miles to see, and that in the open ground without any shelter. In fact, the name Wood Anemone seems misapplied here in Worcestershire, where it is now blooming profusely in the open fields, along with the pretty Celandine. This, I believe, is the case with several plants which may be found sometimes growing in woods, but which flower better and last longer without any shelter from trees, or, at least, evergreens, and this ought to be taken some notice of in making plantations of them.—F. CHITTY.

NEW BOOKS.

SELECT ORCHIDEOUS PLANTS.

By R. Warner, F.R.H.S. Cultural Notes by B. S. Williams.

PART IV. is now published, and fully maintains the high character we have previously given the work, both as to the extreme beauty and faithfulness of the portraits, and the fulness of the directions for cultivation.

The present Part contains—1, *Epidendrum nemorale majus*, "without exception, the finest of all the Epidendrums in our gardens," and commonly, but erroneously, named *E. verrucosum*. 2, *Saccolabium violaceum*, "a magnificent plant, native of the Philippine Islands." 3, *Cypripedium hirsutissimum*, "imported about four years ago from India, and first flowered at the Paradise Nursery, Holloway." 4, *Cattleya Dawsonii*, "a very rare plant," which "may be a wild hybrid between *Cattleya labiata* and *C. Mossia*," originally from Brazil. It is justly observed by the authors that it is difficult to keep pace with the rapid rate at which this genus is increased; but we echo their hope that they will "yet be able to bring some other fine acquisitions to its ranks within the compass of the present volume."

THE SCIENCE OF WINDOW-GARDENING.

A Lecture delivered by Walter H. Bosanquet, Esq., at the National School-room of St. George, Bloomsbury, March 31st, 1863. Published by request.

ANY one who from the title of this pamphlet anticipates that it is an abstruse descant on the sciences applicable to plant-culture will have arrived at a very erroneous conclusion. So far

is it from being abstruse, that it is a series of good directions how to grow successfully plants in pots, with the addition of intelligible explanations of the reason why each practice is needful. It is well calculated for the use not only of town window-gardeners, but for other amateur cultivators of plants in pots.

As an evidence that the lecture is practical, we quote the following:—

"The first thing with which you must supply yourself is, of course, a flower-pot; and the first question that suggests itself, What size is most suitable and convenient? I think you will generally find a four or six-inch pot—that is, one which measures 4 or 6 inches across the top inside the rim, to be the most convenient. There is no advantage in using a new flower-pot; but if you use a new one, you must be careful, before making any use of it, to dip it into a pail of water, and allow it to dry. This is done in order to expel from the pores the dry air, which would absorb moisture from the mould, and cause it to shrink. If you use an old pot you must be careful to see that it is perfectly clean both inside and out. At both the Flower Shows which have been held in this parish, I noticed that many of the exhibitors had given their flower-pots a coating of bright red on the morning of the exhibition. This no doubt adds very much to the smartness of their appearance, but it by no means conduces to the well-being of your plants. On the contrary, the lighter the colour of the exterior of the pots, the better will the roots inside them fare, as the light colour will insure a more equal temperature. A pot of a medium colour—that is to say, something between white and red, will, perhaps, be more agreeable to the eye than the former, and more suitable to the plants than the latter. You may, if you like, paint your flower-pots green, or, better still, of a stone colour; and if you adopt the latter colour, and desire to make them look as if they were made of stone, you may achieve your object by sprinkling the paint, while wet, with silver sand. Be careful, however, if you paint your flower-pots, not to make any use of them until the paint is dry."

CRYSTAL PALACE.

THE Directors of the Crystal Palace have issued their programme of arrangements for the tenth season, commencing on the 1st of May. The matured attractions of this popular and delightful place are now in their fullest perfection, and will amply maintain its prestige as the most favoured resort of all lovers of natural and artistic beauty and refined recreation. Hitherto the price of season tickets has been either one guinea or two guineas; the holders of the former class being required on days of special fêtes to pay 2s. 6d. extra for admission. For the present season it has been determined to issue only one uniform class of ticket, at one guinea, and this is to admit the holder to the Palace and park without any further payment, on all ordinary and extraordinary occasions. The Directors have merely reserved to themselves the right of excepting three days during the year, should they hereafter think fit to give some special fête or fêtes which may render a separate charge for admission on those days justifiable.

Among the other arrangements for the forthcoming season are the Great Flower Show on Saturday the 23rd of May and the Rose Show on Saturday the 27th of June. These Shows as conducted at the Crystal Palace, always constitute leading features of the London season, and have the important advantage, as the Crystal Palace has at all times, of being thoroughly enjoyable in any kind of weather.

Last year, notwithstanding the attraction of the International Exhibition, 2,020,219 persons visited the Crystal Palace, and with its varied features and the increased facilities above referred to, an equally large attendance may be fully expected in the ensuing year.

WORK FOR THE WEEK.

KITCHEN GARDEN.

NOTHING gives a more finished appearance to the kitchen garden than clean well-rolled walks with neat edges. If these edges are of Box they must be kept regularly clipped during the growing season. Box-edging is, however, at all times a great harbour for slugs and other vermin, and, therefore, preference should be given to permanent edges of slates, bricks, or some one of the many patterns of Rosher's edging-tiles, if these could be procured. With ordinary care any of these will last for many

years, and if well laid down in the first instance no further trouble is required with them. *Beans*, earth-up the early crops, and where they were put in the ground the latter end of last year, they should be dug between with a fork. Make another sowing. *Broccoli*, all the late sorts to be sown. *Cauliflower*, raise the hand-glasses and loosen the soil between the plants, after which give them a good soaking with manure water. Some of the forwardest of the early-sown Cauliflowers and Cabbage plants will now be in a fit state for final transplanting, which should be done the first favourable opportunity, and in the event of dry weather continuing they must be kept well supplied with water. *Celery*, proceed with the pricking-out of young seedlings, as also the young seedlings of Brussels Sprouts, *Savoy*, *Broccoli*, &c., as they become large enough to handle. *Lettuce*, water the early ones if necessary, and plant out some of the plants raised in the frames or houses. Tie-up for blanching a few of the largest Bath Cos that have stood through the winter. These to be kept well supplied with water during dry weather in order to induce rapid growth, which is essential to the production of that tender crispness so prized in this variety. *Leeks*, transplant from the seed-bed as soon as they are large enough, in rows 18 inches apart and 9 inches plant from plant. The soil cannot be too rich. *Peas*, make another sowing of two or three different varieties according to the consumption. Continue to earth-up and stake the earlier crops; but previous to earthing-up let them be well thinned-out if too thick. This is a more important consideration than is generally allowed. We often sow thick in order to insure a crop, but if all come up and are left, they will grow certainly and bloom and produce a number of small pods, but after a gathering or two they are gone: whereas, if well thinned out a greater weight of finer Peas is produced and they will continue to grow and bloom so as to produce a succession. *Potatoes*, hoe between the early crops as soon as they are above ground. *Scarlet Runners*, sow full crops, and also Dwarf Kidney Beans. *Spinach*, make another sowing the latter end of the week. Attend to the thinning of the early crops. *Turnips*, where there are any grown in frames they will require watering in dry weather, which will prevent them becoming hot and hard. The present dry weather is particularly favourable for the destruction of weeds, and it should not be lost sight of; for, be it remembered, the destruction of one weed now is destroying what would shortly be the parent of many. The same may be said of insects.

FLOWER GARDEN.

The bright, beautiful, and varied hues of lovely green now worn by trees and shrubs, the fresh verdure of the lawn, the choral harmony of the feathered tribes, the bursting buds—all contribute to render this a delightful and most enjoyable month. To the gardener, whether amateur or professional, it is full of promise; already in his mind's eye he views his gay and odoriferous parterre, his trees replete with luscious fruits; and while expressing a devout wish that Flora and Pomona may reward his zealous care, he feels some misgiving as to those blasting visitations of destructive insects vaguely denominated blight. He recalls that his fairest Roses may have "the worm i' the bud," and trembles when he remembers that the aphides sometimes produce sixteen generations in one season. Let all preparations be made for the busy time of bedding-out; determine your plans as to height and colour; pay particular attention to the arrangement of the latter. A flower garden may be richly furnished with plants, but be very ineffective if the colours are badly arranged. For producing brilliant effects in masses reject particoloured flowers; such are never effective. Use pure and decided colours—such as brilliant scarlet, pure white, deep purple, bright yellow, &c. Take care not to mix plants which are of doubtful duration when in bloom with those of a more permanent character, remembering always that the beauty of a formal flower garden depends upon its being in all its details a work of art in which no blemish should occur. There must be high keeping, symmetry, judicious arrangements of colours, traceable to fixed principles, or it will not form a satisfactory whole.

FRUIT GARDEN.

Proceed with the moderate disbudding of Peaches and Apricots. Plums will now require a share of attention in this way by removing all the foreright shoots from the young wood, taking care not to leave more than can be kept well nailed-in without crowding. Continue to remove all superfluous wood from Vines. Stir the surface of the earth well amongst Strawberry plants, and if in a very dry state, give them a liberal supply of water.

GREENHOUSE AND CONSERVATORY.

Continue the necessary attentions to Fuchsias and other soft-wooded plants, which will be required for the conservatory; also, the plants that are now making active growth should be liberally supplied with water. Those growing in prepared borders to be examined to see that the roots are kept sufficiently moist. Take the opportunity of an early hour in the morning to give a good washing with the syringe to everything excepting the plants in bloom. Remove decayed leaves and flowers as they appear. Young specimens of greenhouse hardwooded plants to be kept as moist and warm as can be done without inducing weak growth.

STOVE.

Attend to the training the shoots of twiners as they advance in growth, and do not allow them to get entangled before giving attention. Also, attend to the stopping and training of other plants, and afford free-growing subjects plenty of pot-room. Persevere in keeping down insects, which, if allowed, will progress with great rapidity. Proceed with repotting Orchids as they may require it. Do not use the syringe too freely among those starting into growth, but keep the atmosphere thoroughly moist.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

PROCEEDED with staking *Peas* as opportunity offered. Some of these having between them two rows of *Broccoli* not yet finished, cut off a number of the leaves and bent the plants slightly to each other to relieve the rows of *Peas*. Forked the ground slightly before staking, and as soon as the *Broccoli* and other Greens are wholly removed will fork the ground all over to let sun and moisture freely into the soil. Watered those fit to gather in orchard-house, and the earliest succession of dwarfs at the foot of walls. Sowed succession of Broad Beans and *Peas*. The ground being rather rough and poor where the latter were to be sown, dug it well again, incorporating some rotten leaf mould and leaving the place hollow so that rains may be retained, and waterings given if necessary, whilst the deep stirring will dispense with stagnant moisture—one fruitful source of mildew. Though the *Peas* will thus, when covered, seem to be in a shallow rounded trench, they will be covered no more than usual—say 2 inches, as we have no faith in deep covering. A shrewd practitioner was resolved to have early *Peas*, save them from the frost, and get rid of all the trouble of earthing them up, by sowing them from 9 to 12 inches deep; and in the two latter objects he succeeded admirably, as he was never troubled with them above ground at all.

Sowed *Scarlet Runners*, covering them slightly with light soil mixed with burnt charred earth and lime to keep slugs and worms from them. Sowed Dwarf Kidney Beans in boxes, to be transplanted, as the soil is not warm enough for them out of doors yet, and the weather though fine is getting colder. Expected rain after the high winds of Wednesday, but little or none has come. In about a week will sow the main crop of Beet, and a succession of Carrots. The ground being dry on the surface, neither the first-sown Carrots, Parsnips, nor Onions, are yet rowed clearly enough to admit of hoeing. If rain do not come soon will slightly roll the Onion-quarter to firm the earth about the young seedlings. A slight surface-hoeing afterwards will make them loose enough. Sowed succession of Onions, Lettuces, &c., for salading, and find the warm weather has brought Lettuces and Cucumbers into demand. Pruned and regulated the latter in order that the plants bearing freely should not exhaust themselves by having too many fruit at a time.

Watered Mushroom-beds in Mushroom-house. Will prepare some rough stuff for beds out of doors under a thatched roof, and open in front, as described last year. Planted out last lot of Potatoes on a poor piece of ground. Planted out Cauliflowers that had previously been pricked out, lifting the nice plants with balls so as not to feel the moving; and though this takes more time than using the dibber, there is no flagging and wetting after planting. Took pots of herbs that had been sown under glass to harden-off, and beat up rows and beds of herbs always in demand—as Sage, Mint, &c. The best time to make a fresh bed of the latter, is when the fresh shoots are about 2 inches high. These, slipped off 1 inch below the ground and planted in well-pulverised rather rich soil, about 4 or 5 inches apart, will make a fine green bed in the autumn for late *Peas*. In many soils Mint soon dies out, and, therefore, it is wise to

fresh plant one or two beds every season. But for the trouble and unsightliness there is no better plan of blanching Sea-kale at this season than covering the plants a foot or 15 inches thick with leaves. When pots or boxes are used, a little light is apt to get in, unless the pots, &c., are covered all over with earth. Pricked out Celery; sowed in succession. Pricked out Chilies, &c. Potted succession Cucumbers, and sowed for ridges, and Vegetable Marrows for general crop, as the plants do better when not stunted or knocked about before planting.

FRUIT GARDEN.

Run the hoe through Strawberry-beds and borders, which are now showing their trusses strongly. This will kill incipient weeds, keep the ground from cracking, and let rains go in nicely when they come. Had we such a thing at command we would now give the plants a slight dressing with soot or lime, or both together, as the first will tell on the quality of the crop, and both will keep slugs and worms at a distance.

Some time ago we told of making patent ventilators in the front wall of a Cucumber-pit, the openings being the size of a half-brick, and these were fitted with wooden plugs in the wedge-shape, so that we could give very little air or take out the plug as we liked. As the openings are against the hot-water pipes no plan could answer better for securing a sweet hot atmosphere. But there are few advantages without some countervailing disadvantages; and the disadvantage in this case is that these openings being a little above the outside ground level, mice have got in, and soon let us know they were there. Close to the back wall and the glass of this narrow pit is a shelf of Strawberries that were, if anything, extra promising and just taking their second swelling. In a night or two they cleared them so well that it is not worth while keeping the plants. We should have been apt to have forgiven the mice if they had eaten what they liked, and left the remainder; but the shelf and the surface of the pots were covered with fruit not half swelled which they nipped-off and strewed about for their diversion, after selecting a few of the half-ripened seeds. We trust, as they have cleared away since phosphoric paste and poisoned wheat, that they have been punished for their misdeeds. Fortunately they have not as yet troubled Strawberries ripe or green elsewhere. In using manure water even now for Strawberries, care should be taken that it is clear and not too strong, or it will do more injury than good. The same rule applies to all fruit trees in pots. The amount and the strength of the manure water should depend not only on the wants of the plant, but also on its condition. A plant in full growth with vigorous shoots and swelling fruit will like an amount of nourishment in the shape of strong liquids that would next to glut and render sickly a plant merely swelling its buds or opening its blooms.

Thinned Grapes, tied-up Vines in late house loosely, keeping them still a good way from the glass to guard against sudden extremes, as we do not wish to give them any or much artificial heat at present. Shut-up one orchard-house early in the afternoons, so that it may succeed the Peach-house sooner. In such a case one fruitful source of mischief is not giving air soon enough in the morning. In this house we placed an old iron stove that was lying about after being turned out of some part of the mansion; and though we have had little occasion to light it this season, our previous experience with it and what we have seen of brick Arnott's stoves leads us to the conclusion, that for places where a high temperature is not needed no other plan is so simple and economical. So far as fuel is concerned, a small shovelful will often do more than a bushel either by common flue or hot water, if people would take a little trouble with simple matters. Of course we are glad to see all experiments tried, and we have no fault to find with those who for some little pet greenhouse will have an expensive boiler and a hot-water apparatus which, after all, they find consumes a vast deal more fuel than they were given to believe. Nothing is so nice as hot water for a fine finished greenhouse; but there are many houses where the extreme of nicety is not at all desirable—where keeping plants and fruit and working comfortably amongst them, and a moderate degree of neatness are more wanted than the extreme of elegance and refinement; and in many such places we have not a doubt that a healthy temperate atmosphere may be maintained by a stove with large evaporating-pan for years for something like the expense that would be required to set a hot-water apparatus fairly going. Even for starting the idea of brick stoves Mr. Rivers deserves the thanks of all humble amateur gardeners. With all this we should never think of having anything but

hot water in a large establishment, as combining in such circumstances ease of management with general economy.

Having said this much, we hope that the discussion about flues and boilers and the best boilers, suggested by our friend Mr. Robson, will be attended with some valuable results, though we are not very sanguine on the subject. As to the mere economy of fuel, having had considerable experience with flues and the various kinds of boilers, the result of that experience is, that for moderate-sized houses to be heated singly by a flue or singly by a boiler, and where a somewhat regular high temperature is required, the flue will be the most economical, and if in good order will be just as safe as the boiler and the pipes. When several such houses are to be heated by one boiler, then economy in fuel will be on the side of the hot water, as there is only one wasting chimney instead of many. The chief drawback against this system is that the boiler may fail at a very critical time, and whole crops be ruined before it can be mended or a fresh one put in. At such times the discarded and slighted stove and even unhealthy open pans of charcoal have had to be resorted to.

BOILERS BURSTING.

As we have alluded to the subject we should also, like Mr. Robson, wish for facts as to the wearing-out qualities of cast-iron and wrought-iron boilers. We have heard of a good many of both kinds giving way within these two years. In our own practice the wrought-iron have been by far the least lasting. From what old men tell us there are two cast-iron boilers here that have had rough treatment, and must have been worked for at least thirty years. We have had two wrought-iron ones worn out into holes and to the thinness of a wafer in about fifteen years. Both of these gave way in critical times—the first in the terrible frost of Christmas, 1860; and the second, which heats three pits, gave way early last year, when all the places were filled with plants needing heat.

This reminds us that we have never answered some half a dozen letters as to how we doctored-up this boiler, so that, bad as it was, it is doing its work well now; and we suppose we must let it do so until it collapses again. The boiler was saddle-backed, and some 15 inches deep on the side. On examining the side where the water streamed out into the flue, there, for the space of a foot, the iron was so worn out that we could stick our fingers through it. The dread of having to wait for a fresh boiler made us resolve to tinker it in the simplest manner. The old scaly iron was scraped off, and the side dried, and then well smeared all over where holed and thin with a mixture of red and white lead. An iron plate, some 17 inches by 10 inches, was similarly daubed, and then placed against the side of the boiler, and driven tight home by four pieces of iron being placed across and driven down tight between the plate and the brick-work on the opposite side of the flue. This held the plate firmly against the side of the boiler without rivets or anything else. To make assurance more sure, a row of bricks was laid on the bottom of the flue on that side, holding the plate if anything still more firmly, and with the disadvantage of taking off that much from the depth of the flue, and thus preventing the heated air acting on so much of one side of the bottom of the boiler. Not a drop of water has leaked since, though the boiler has been almost constantly at work; and we suppose that now we will go on with it until the other side give way. Of course, if the leakage had happened in summer, common prudence would have said, "Have a fresh boiler at once;" but at the season it occurred we must have lost many things before the boiler could have been taken out and a fresh one put in and the connections made. All the top-arched part of the boiler was as good as ever it was. We feel sure that our fresh-plated part though merely squeezed on will be the last to give way.

This patching may be interesting to some one in a similar difficulty, and we have no doubt such patching could often be done if the wornout or defective part could be got at, which opens up the whole question of exposed boilers, and on that, too, much information is wanted—such as how best to work them so as to secure all the heat they give off, and yet feed them from outside the house.

ORNAMENTAL DEPARTMENT.

Proceeded with potting and planting much the same as last week. Out of doors the chief work was rolling the lawn, and chiefly the sides of walks, mowing these especially, and cutting afresh with line and edging-iron the sides of the walk, as if done well now the shears will do all that is necessary during the season, and much more easily from the cutting now; but taking

off as little as possible, a straight line and not a raw edge being the object. In addition turned over the soil of beds, and nearly finished digging flower-borders.—R. F.

TRADE CATALOGUES RECEIVED.

F. Boshell, 86, High Street, Borough, London.—*Descriptive Catalogue of Dahlias.*

A. Verschaffelt, 50, Rue du Chaume, Ghent.—*Nouveautés pour 1863.*

TO CORRESPONDENTS.

ANEMONE (Subscriber, Dublin).—It is *Anemone hortensis miniata*, or Red-flowered Garden Anemone. The species of which it is a variety, *A. hortensis*, is a native of Italy, and has striped petals.

GRASS SEED (Jesse Carter).—Not knowing anything about the Grass, and not being able to foretell whether seed will be scarce or plentiful, we cannot say what the value is. You had better send full particulars and a sample to some wholesale agricultural seedsman.

HEATING BY GAS (G. A.).—Either plan will answer for heating the little boiler by gas; but we have great doubts of such small pipes giving you the heat you require, or of the boiler and pipes all of tin lasting any time. We would have as much faith in the heated air from the gas passing through one-inch pipes. If you attended to it yourself, we have no doubt you would make your very ingenious plan answer. For economy and certainty we would prefer a small stove close to the back wall. It would cost a trifle in comparison of the gas and pipes.

REPOTTING ORANGE TREES (Subscriber).—We would repot the Orange trees with the fruit on them as soon as convenient if they require it, and keep them in theinery for a few weeks afterwards. 80° would be high enough for them, and they must be hardened-off by degrees to the temperature of the greenhouse or conservatory. They will root best in a high temperature.

VINE LEAVES SPOTTED (A New Beginner).—We should think from the leaves that the roots of the Vines are too moist, and that little sun strikes the soil in which they grow. We hope that your border of 3 feet deep is drained; if not, it would be advisable to drain it next season, or even this; but perhaps it would be best to raise the Vines early in the autumn and put a foot of rubble below the roots, which would leave 2 feet for soil—quite enough. We see no reason why the Vines should not do; but care must be taken not to sodden the border with water from the plants standing over it. It would be well, especially in winter, to have flats or pans for such plants. Vines will do very well planted against such back wall, and trained down under the roof; but the more sun strikes against the soil at the back wall, the better will the Vines do.

HOT-WATER PIPES UNDER OR OVER A DOORWAY (B. C. W.).—If your kitchen boiler had been against the back wall of your greenhouse there would have been no difficulty; but being near the wall on the opposite side does away with most of the economy of the affair. The boiler being raised considerably above the floor of the kitchen, and the floor of the kitchen and the conservatory being on the same level, also increase the difficulty. If the top of the boiler had been sunk a foot beneath the kitchen floor, all would have been smooth sailing. The position of the pipes in the greenhouse are below the level of the boiler, and you cannot heat in that manner. There will be no difficulty, except the inconvenience, in getting the pipes through the kitchen, if the lowest pipe in your greenhouse is higher than the top of your boiler. You may then take a flow-pipe from the top of your boiler into a cistern on the same level as your present supply-cistern, or as much below it as you like, provided it is higher than the top of your boiler—5 or 6 feet will do very well—and from that take your flow-pipe, descending to any suitable level, provided it is higher than the top of your boiler. This pipe may go round the house, or return; but the lowest pipe also should be as high as the top of the boiler, and from that lowest point the return-pipe may descend and pass under the kitchen floor, and rise to the bottom of the boiler, and thus avoid the doorway, having an open air-pipe at each of the bends. But though this might answer, we should prefer that the return-pipe from its lowest point should go through the wall, go round the wall of the kitchen on that level, above the level of the boiler, and then descend at once to the bottom. The pipe, if desirable, when going round the wall of the kitchen, could be boxed-up. This would be better than sinking below the boiler.

SEEDLINGS (A Young Subscriber near York).—Good border flowers, but not superior to others already in cultivation. Nothing novel about them.

YUCCA FILAMENTOSA NOT FLOWERING (E. H.).—The last three years have not been so favourable for *Yuccas* blooming as the three preceding seasons, and we fear your having removed your plant lately will not favour its blooming this season, although it is likely it will facilitate its doing so another year. We have had as many as a dozen spikes of *Yuccas* out at a time, and no flower that we are acquainted with looks more noble. The spike of *Y. filamentosa* is about 3 feet or more high, and thickly set with cup-shaped bloom of a creamy bluish colour. *Yucca gloriosa*, *aloifolia*, and *recurva* are much larger, spikes of 8 feet and upwards being not unusual. The individual blooms are much the same in colour as *Y. filamentosa*, but more bulky and numerous. They flower best in a dry sunny situation and on dry or chalky soils. There is no fixed time for their flowering, for we have had flower-spikes rising in October, and, of course, were cut off in winter, and we have had them early in May. Where there is a number of plants they flower at irregular times. We should think that, unless the bloom-buds of your plant were formed during the fine weather of last autumn, your shifting it lately will prevent its blooming this year; but it may be otherwise. Hot dry summers and autumns suit this plant, and you will doubtless be favoured with a bloom from it in due time. The plant in bloom you send is *Phlox setacea*; the other not in bloom seems a *Saxifrage*, and most likely *S. hypnoides* or *S. tridactylites*.

FLOWER-GARDEN PLAN (An Amateur, Fareham).—The only change we would recommend is to cross your colours at the sides of the diamonds, instead of having all warm on one side and all cold on the other. Thus make 9 and 19 *Gazania*, and 10 and 18 *Lobelia*, or dark *Calceolaria*, and so on.

DOUBLE PURPLE PERIWINKLE (M. S.).—Yours is the double variety usually met with. We cannot tell whether our Worcester correspondent would exchange some of his double blue for some of it.

DOUBLE AND SINGLE VIOLETS (E. H.).—After the double Violets have done flowering, scatter a little sifted leaf-mould amongst the shoots, which will encourage them to root, when, some time towards the end of May, the self layers may be taken off in showery weather and planted in some suitable place. The old plants may be trimmed back into tufts somewhat larger than they were the year before. This trimming, however, had better not be done until the growth of the season is nearly completed, after which the blossom-buds will be formed, and they may at the same time be treated to judicious doses of liquid manure. The name of your plant No. 1 is lost, but No. 2 is *Coronilla glauca*.

CUTTING BACK PEACH AND NECTARINE TREES (J. H.).—Although the blossom has not set, it would not be advisable to cut them much back if they are in a vigorous condition and no fruit on them, or they will produce wood much too gross to expect much fruit next year. At the same time, if last year's wood was not sufficiently thinned, a part may now be cut away with advantage. The great thing is to balance the number of shoots of the current year with the support afforded them by the root, so as to insure healthy well-ripened wood of a uniform size in all parts of the tree, and none of it too gross and succulent. A too-severe cutting-in may induce the latter if the trees be vigorous, while, if otherwise, they will be benefited by a timely pruning.

THRIPS ON CUCUMBERS (An Old Subscriber, Mrs. E. T.).—Heat and dry atmosphere are the delight of the thrips; successivesmoking with tobacco, and frequent syringings and a moist atmosphere the chief cure. We would remove a good many of the infested old leaves and burn them; but at this season we would raise young plants in another place, and when strong get rid of the old ones. There are many modes of keeping them down, as catching them with a moist finger, but they are difficult to get rid of. The advantage of having a canvas blind is the using it only in bright sunshine. We would leave it off at night, and evenings, and mornings, before the sun became strong.

FLOWER-GARDEN PLANS (H. D. C.).—You deserve credit for the mode you have attempted to colour your beds in. The first group is very nicely arranged, as to ground plan, there being a hexagon for centre, six pointed ovals round that, and six rounded triangles round them, the points coming in the openings between the ovals. Such a group is just made for balancing; and if, after what has been said on planting flower gardens generally, it pleases you to have all these thirteen clumps different, why you have a perfect right to please yourself. You would also see what has been said of *Roses* for a centre lately; but you could relieve yours by *Stocks* and *Asters*; we would have the *Stocks* outside instead of the *Asters*. The outside of the six ovals, being of *Cerastium*, will give an idea of sameness; but they will be a considerable distance apart, and that will relieve them. Four of these beds are to be filled with *Verbenas*, one with *Heliotrope*, and one *Carrots* and *Phlox Drummondii* mixed. The other six beds are also all different, and on the system you have adopted we think the result will be very good, though every separate bed is distinct and different, there being no pairing or balancing. We cannot say, however, that we like the idea of *Carrots* in a flower-bed, however pretty the foliage. There is such a difference in admiring the merely beautiful, and thinking of the accompaniments of boiled beef. We do not like the plan of No. 2 nearly so well, there is too much likeness in form to the first. The two No. 3's seem also to be offshoots, destroying the regularity of the figure or group; and, then, it has no centre to fall back upon as it were, otherwise we like the system of balancing better; and as you have done this with 1, 1, 2, 2, 3, 3, so as, we are sure, to look well, we would carry this system out in all this figure by pairing 4 and 6, 5 and 7, and 8 and 9. The two groups will be planted then on two systems. We have no doubt your ribbon-borders of four rows *Punch Geranium*, *Red Beet*, *Calceolaria Aurea floribunda*, and *Cerastium* and *Lobelia* mixed, will please many. For our part we would prefer purple *Spinach* or *Perilla* to the *Beet*. It will be so apt to conjure up ideas of a well-dressed salad.

INSECTS (W. Hallett).—The black insect is the destructive *Otiorynchus sulcatus*, which must be sought for after dark, a cloth having been previously spread under the Vine. On the approach of a light it falls to the ground, and must be destroyed. The pale-coloured insect is the common cuckoo spit insect, *Ophrophora spumaria*. It is only an accidental visitor to the Vine.—W.

NAMES OF PLANTS (W. Taylor).—*Erythronium dens-canis*, or common Dog's-tooth Violet. (*Anne*).—The blue flower from the wall is *Linaria cymbalaria*; but, not being magicians, we cannot tell the name of an *Acaia* from a single leaf. (*Novice*).—1, *Edwardsia microphylla*; 4, *Pernettya mucronata*. The other specimens are not even in leaf! (*An Amateur, Londonderry*).—*Muscari moschatum*. 1, *Polystichum aculeatum lobatum*; 2, *Lastrea æmula*. We do not know that the variegated Japan Honeysuckle has been tested, but the species of which it is a variety is generally considered hardy enough. (*Alumnus*).—The numbers were nearly all displaced. The box contained not *Primula elatior*, but *P. vulgaris umbellata*, *P. veris*, *Adenandra uniflora*; 4, *Doronicum*, perhaps *plantagineum*, but you have not sent root-leaves; 5, *Ranunculus amplexicaulis*; 6, *Arabis albidula*. (*E. M., Sandymount*).—*Ribes speciosum*. (*A. L.*).—*Berberis aquifolium*, *Pyrus* or *Cydonia japonica*. The first would do in a shaded border; the other is more suitable for a wall or trellis.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

WHICH OWL DESTROYS GAME?

YOUR correspondent, W. H. Beadon, inquires which owl destroys game. Mr. Warren the head gamekeeper here (Thornham Hall) informs me that he has seen the horned owl take away young pheasants, and also that he saw the barn owl with a young rabbit in its clutches on the branch of a tree. The above facts are, I think, sufficient proof that owls like a taste of game; and why should such beautiful specimens of the feathered tribe be deterred from tasting some of the good things amongst which they dwell? What can be more lovely than to

rise between 4 and 5 A.M., and to listen to the beautiful music of the feathered tribe?—the blackbird, with its rich mellow notes, trying to out-do all its neighbours; this black-feathered gentleman is particularly fond of a good feast of Strawberries, and richly he deserves it. Let us therefore be "true protectionists," and preserve both birds and fruits, not forgetting to leave a few for the poor blackbird.

Old towers, summer-houses, and such places are much frequented by owls; and many a would-be-destroyer of this noble bird has been caught with a pail of water.—JOHN PERKINS.

VIRGIN QUEENS CAN CERTAINLY PRODUCE PERFECT DRONES.

MR. LOWE is quite correct in stating that the progeny of virgin queens are generally extremely puny from being bred in worker cells; but this is also the case with the male offspring of impregnated queens when produced under the same disadvantage. I know not whether "B. & W." may have adopted a similar precaution; but in my own case I have taken care to supply the virgin queen referred to in page 270 with drone-combs, and the result is that she breeds as large and handsome drones as can possibly exist under any circumstances.

With regard to the doubt expressed as to the value of such drones in queen-rearing, I have already proved beyond question by careful anatomical investigation that the progeny of virgin queens are perfectly capable of propagating their species. As to the details of this examination it is unnecessary to repeat them here, since Mr. Lowe may readily refer to them in Nos. 30, 31, and 37 of the new series of THE JOURNAL OF HORTICULTURE.

In conclusion, I can fully indorse all that he has stated with regard to the apiarian disasters of the past winter and early spring. I believe that in many districts bees have become nearly extinct.—A DEVONSHIRE BEE-KEEPER.

BURYING BEES.

THE year before last I procured a swarm of bees, and placed them in one of Neighbour's cottage-hives. This hive stands in a wooden receptacle constructed for it, and faces the south. Although the bees worked well apparently during the autumn, they yielded me no honey. During the winter I fed them, and last year they threw a swarm, which I hived and placed alongside the first-named one. From neither of these hives did I get any honey. In November last a friend advised me to bury the two hives in the ground, and assured me that the bees would require no feeding, and commence breeding much earlier than they would do by any other treatment. I resolved to try the experiment with the "Neighbour's hive," and accordingly buried it about a foot underground. On digging it up about the beginning of March, I found that the hive was filled with dead bees, most of them in a state of decomposition, and the comb quite spoiled. Supposing that my ill-success arises from my own mismanagement in some way, may I ask you to inform me how I erred? That burying the bees, though not, I believe, generally practised, proves in some cases successful, is clear from this paragraph cut out from a newspaper this week. It is the only authority I can refer to in print, though I have on other occasions heard the practice recommended.

"BURY YOUR BEES.—In the fall of last year, Mr. John Finlayson, of Cumbernauld, who had experienced great difficulty in preserving hives of bees during the winter, resolved to enter on an experiment with the most weakly hive in his stock. This he buried beneath a foot of earth in his garden; and though the bees in the other hives, which were protected in the ordinary way, all died, those in the buried one were on their disinterment on Tuesday last, found to be alive, and at once commenced to buzz about."—(Scottish Farmer.)

I have now one hive (last year's swarm), but the bees are not very active. It is fortunate for me that I did not bury both hives. How ought I to proceed to make this one hive prolific?—N. CLAYDON, *Lowick, Lancashire.*

[Many years ago several of our contributors tried the experiment of burying bees, and generally with the same result as in your case. Very few survived, and those were in a very weak state. Such newspaper paragraphs as you enclose do infinite mischief to the inexperienced by recommending what has long been exploded. Burying bees is quite unnecessary in this climate, and where it is habitually resorted to in order to elude the

intense cold of northern winters the pile of hives is only partially sunk beneath the surface, the projection being well thatched, and every precaution taken to keep them dry by thoroughly good drainage and ventilation.]

OUR LETTER BOX.

FERTILISATION OF EGG (*Eliza*).—The probability is that the next day but one after running with the Brahma Pouter cock, the egg would have been available for sitting; but certainly all after that date may be employed.

REARING SILVER PHEASANTS (*J. P.*).—The best bird for rearing Silver Pheasants is a small hen. We do not depend on a Silver hen to sit on her own eggs. They will not always do so, nor are they careful mothers. We have one at the present time sitting close on nothing: she has been thus employed for more than a fortnight. As soon as some of our hens begin laying again we intend to treat her to three or four eggs, but our experience is not much in favour of her rearing poults. We, however, think her a better bird as a sitter than a common hen in confinement.

CHICKENS REMAINING WITH THEIR MOTHER (*C. L.*).—In the winter chickens should remain under a rip with the hen longer than in the spring or summer. In the spring six weeks are long enough. In the summer still less time will do. The hen is wanted principally at night to cover the chickens and keep them warm, and as the nights become short and warm chickens are less dependant on the mother. Yours will therefore do very well. Chopped pieces of cooked meat are very good. Instead of putting the hen with ducklings under a coop, shut her in an old pigsty or some such place, and she will do very well. Ducklings are not active enough to be under a rip, and webbed feet are not favourable to confinement. They will not do by themselves at three days old. Cochins pullets under favourable circumstances lay at from sixteen to twenty weeks old; Game and Dorkings from six to eight weeks old.

LICE ON FOWLS (*J. P.*).—Yours seems a singular case. We have never known one in which dust did not destroy these pests. If you will put heaps of dry dust, the finest you can, add thereto black sulphur at the rate of 1½ lb. to the bushel, and place the whole so that the heap shall be in the sun, we think you will be free from torment. It is the law of nature that all birds shall use the bath—some water, some dust—but both for the same purpose, to rid themselves of vermin. If you know of a spring that runs across a lane in a tolerably quiet neighbourhood, and winds and frets its little way over, around, and among gravel stones, you will in the middle of the day find it full of small birds washing with might and main, till at last they are all a like colour, disappearing in the thorough wetting. If you are a sportsman, or if you are an observer of the habits of birds and fond of natural history, you will find at midday, on the dusty banks, pheasants and partridges basking, with one wing up and their feathers open. They are not content with half measures; they fidget and scratch and twist till they are half buried. When you have disturbed them you will find each was half buried in the finest possible dust, and the clouds that fly from them as they take wing will show how thoroughly they enjoy their bath. It is a necessity, and it accomplishes for them that which you want for your chickens. In a very wet season, when there is hardly a dry place to be found, all these birds are infested with lice; and if there be a beetling bank intersected by the roots of old trees, you will see by the works they have found it out, and, although no sun penetrated, they have dusted there. If the remedy we have suggested fails, then lime-white the houses thoroughly, especially the corners, new gravel the floors, and close them against the poultry. Let them for a time seek fresh roosting-places and scatter themselves about. If that will not do oil their feathers on the crown, under their wings, and on the back. This is the last remedy, as it spoils the plumage for a time. Feed them lightly on ground food, and if you have used rice or meat discontinue both.

CHICKENS DYING SUDDENLY (*T. G. & Co.*).—Your chickens pick up something that kills them. We know no disease that would kill them as rapidly as you describe.

HENS WITH WOUNDED BACKS (*G. Y.*).—Separate the cock from them until their backs are healed. Dress the wounds with merely a little iard to exclude the air.

POULTRY LOSING THEIR FEATHERS (*L. T. B.*).—We are afraid you are like many of our friends—you are killing your fowls with kindness. The Spanish lose their feathers either from internal heat from over-feeding, or from diseased insides: they pick the feathers one from the others. The origin of the Dorking disorder is the same. As these things exist in your yard, and as we will engage the nearest farmyard is free from anything of the sort, we advise you to do as they do. Cease to overfeed; that disorders the birds, and from repletion they do not seek the natural foods and medicine the earth teems with on its surface. Do not take so much care of them. Let them rough it, forget to feed them sometimes, and give their meals so that they must seek them. If they have been fed from any vessel, remove it at once and let them pick everything from the ground. If one hen in particular pecks the feathers of the others remove her, as they soon acquire bad habits.

APIS DORSATA (*W.*).—Except as a matter of curiosity, it would be absurd to import this Indian honey bee even if it were practicable, as, unlike our domestic bee, *Apis mellifica*, it is very confined in its geographical range, requiring an Indian climate.—W.

FALLOW COMBS (*R. G. P., Sudbury*).—The best plan would be to invert the hive during the middle of a fine day and replace the combs in their original position, supporting them on either side, and at their original distances apart, by inserting strips of old comb about half an inch wide between each. Then lay three or four strips of the same material, cut sufficiently thick to keep the combs in firm contact with the top of the hive, transversely across them; and, covering the whole with the floor-board, invert it and put the hive in its place. If you cannot manage this the fallen combs must be taken away and the stock liberally fed, in order to enable the bees to supply their place as soon as possible.

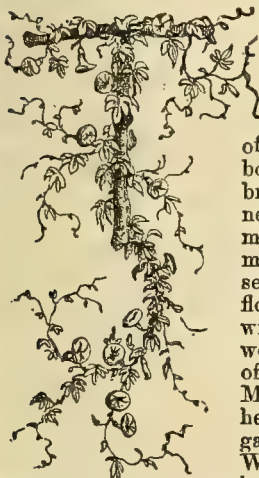
UNDULATED EUPHEMIA (*A Great Lover of Birds*).—Canary seed is the usual food for your birds. When they have young add boiled egg, millet and maw seed, and let them have a bunch of long grass, when in seed, hung up. Place in the cage, at one corner near the top, a small box about 5 inches square and 4 deep, with the nest already shaped, composed of dry moss, grass, and wool, similar to what canaries build with, with some loose in the cage. See our Journal, New Series, No. 50, "The Breeding of the Australian Grass Paroquet in England."

WEEKLY CALENDAR.

Day of Mnth	Day of Week.	MAY 5—11, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock after Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
5	Tu	Speedwell flowers.	29.932—29.922	degrees.	S.	—	m. h.	m. h.	m. h.		m. s.	
6	W	J. Gesner died, 1790. B.	30.043—29.894	79—52	N.W.	.46	27 af 4	26 af 7	12 10	17	3 27	125
7	Th	Meadow Orchis.	29.919—29.735	84—52	S.W.	.80	25 4	28 7	8 11	18	3 32	126
8	F	Lavoisier guillotined, 1794.	29.888—29.782	61—44	S.W.	.60	24 4	29 7	54 11	19	3 37	127
9	S	Hardy Orchis.	29.636—29.481	65—43	S.W.	.31	22 4	31 7	morn.	20	3 41	128
10	Sun	ROGATION SUNDAY.	29.634—29.582	64—44	S.W.	.16	20 4	32 7	30 0	21	3 44	129
11	M	T. A. Knight died, 1838. G.	29.686—29.588	65—40	S.W.	.10	18 4	34 7	59 0	22	3 47	130
				62—43	W.	.04	17 4	36 7	23 1	23	3 50	131

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 61.5° and 39.5° respectively. The greatest heat, 81°, occurred on the 6th, in 1830; and the lowest cold, 21°, on the 8th, in 1855. During the period 147 days were fine, and on 105 rain fell.

ANNUALS.



O obtain a fine show of brilliant colours at but little trouble and expense, there is no plan that can compare with growing a good selection of annuals in the flower-beds and borders. This subject has been brought before me rather prominently, by a letter from a gentleman, wishing to know how he may fill up the gaps which he sees he will have in his beautiful flower garden this season. He wishes me to tell him what sorts would do to sow now in the end of April and the beginning of May in the open ground, so that he might expect them to keep on gay for the most of the season. With the exception of those sown in autumn, or very early in the

spring, this is the time when I generally sow those I wish to bloom through the autumn. To suit other inquirers besides our correspondent, I will divide my lists into several sections, with a few running remarks on each.

1. Annuals sown in April and the first week in May, to keep on for the season.

Alyssum maritimum (Sweet Alyssum), 9 inches.

Atriplex hortensis rubra. For mixing or edgings.

Amaranthus—Prince's Feather, Love-lies-bleeding.

Bartonia aurea, 1 foot. Golden poppy flower.

Calliopsis tinctoria, atropurpurea, marmorata, nana, and lots of others. Drummond's makes a fine bed, and so does Burridge, and indeed all of them. From 2 feet to 2½, except nana, which is about 1 foot.

Callirhoe digitata and *pedata*, very pretty, rose and white, 1½ foot.

Campanula speculum, 1 foot; and *Lorei*, blue and purple, 1 foot.

Clarkia pulchella (rose), alba (white), integripetala, and others, 1 foot. Very pretty; require pruning seed-pods.

Collinsia grandiflora, purple, 6 inches. The only one that will stand.

Chrysanthemum tricolor and *aureum*, 1½ foot.

Convolvulus minor, dark-striped; monstrosus, good for edgings, 1 foot.

Convolvulus major. Varieties for climbing.

Delphinium, blue and purple, and variegated branching Larkspurs, 2 feet.

Eschscholtzia californica (yellow), 1 foot; crocea (orange), 1 foot; tenuifolia, 9 inches, pale, showy, poppy-like flowers.

Eutoca multiflora, viscida; rough, but the colours fine, 2 feet.

Godetia roseo-alba, Lindleyana, rubicunda, very fine, 2 feet.

Will keep on to September. To prolong blooming half the plants should be nipped over when 4 inches high, or the seed-pods picked off.

Helichrysums, white, rose, yellow, 3 feet. Everlastings.

Kaulfussia amelloides, blue and white, 1 foot.

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Lopezia racemosa, miniata, 6 inches, rose.

Lupinus nanus, 1 foot, blue and white; *Menziesii*, yellow, 1½ foot; *mutabilis*; *Cruikshanki*, blue and white, 4 feet; and many others, such as *Dunnetti*, and *superbus*, besides the blue and yellow annual *Lupines*, the last standing well.

Malope trifida, *grandiflora*, purple and crimson, very gay, 3 to 4 feet in height, and better than the varieties of

Lavatera, white and lilac, but which look well in back rows, 3 to 4 feet.

Mimulus, mixed varieties, from 6 to 18 inches. Do well in a moist, shaded place.

Nemophila, of sorts, if sown again in the end of June.

Malcomia maritima (Virginian Stock), red, white, and pink, if sown repeatedly.

Oenothera micrantha, 1 foot, yellow; *Drummondii* nana, 1 foot; *bistorta Veitchiana*, 9 inches, neat, and pretty orange colour.

Perilla nankinensis, purple foliage.

Sanvitalia procumbens, ½ foot, yellow and black.

Saponaria calabrica (pink), alba (white), marginata (pink and white). Fine for dwarf beds and margins.

Schizanthus pinnatus, *Priestii*, pulchellus, about 2½ feet; rosy, pink, white, and lilac.

Reseda odorata (Mignonette).

Schizopetalon Walkeri, white, a few inches high, makes a pretty edging.

Silene. The various coloured *Catchflies* about 18 inches in height, and such low species for small beds and edgings as *pendula* (pink); alba (white); *pseudo-Atocion* (pink); *pulchella*, ditto; *rubella alba*, and *Schafta* (rose and pink).

Sphenogyne speciosa, 9 inches, pale yellow, upright growth, and fine pinnated foliage. This and the *Silenes* will require the seed-vessels to be pruned away.

Tolpis barbata (Yellow Hawkweed). Makes a fine bed or edging.

Tropaeolum majus. The strong-growing kinds for fences, stakes, or covering the ground amongst Dahlias or shrubs; the dwarf and Tom Thumb varieties for beds and edgings, as *Tom Thumb Scarlet*, *Yellow*, *Pearl*, *Crystal Palace Gem*, &c., well diseased, will equal *Geraniums*. *Canariense* is also fine for fences, chains, running over trees, or may be trained as fine yellow edgings.

Lathyrus odoratus, or Sweet Pea, will also do well as back rows, but it would be as well to sow again in front of the first, in the middle of June.

Viscaria oculata (pink), *Dunnetti* (white), about 18 inches, and nana of both, about 6 inches. These will want the seed-vessels to be nipped off.

In fine, pulverised soil these may be sown any time, taking care not to bury the seeds. Small seeds should just have a sprinkling of soil to keep the fierce sunlight off them. In harsh, cold, clayey soils, well dug, but rather rough, a shower would shatter it like lime; then break it fine, and draw ruts for the seeds in proportion to the depth wanted. In such circumstances we would draw the little ruts double the depth wanted. Scatter the seeds rather thinly, and if the ground is dry water the places with a fine rose, and then cover, if with a little fine soil all the better, but leaving the little ruts only half filled, which will be found a good plan if a future watering should be desirable, or if a little rough charred earth and lime should be found necessary for throwing among the seed-

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lings to keep slugs and worms from them. The chief drawback to this plan will be the birds, which, if they do not eat will be apt to scratch the seeds, and thus spoil the unity of your arrangement. The remedies are covering the seeds with pots, with tree branches, or with nets, until the seedlings are well up.

Even then, however, there will likely be some vacancies; and, therefore, as a reserve, it would be well to adopt the plan of a correspondent, and sow in pans or pots under glass. For myself I would prefer placing 3 inches of rough soil and leaf mould on a hard bottom, and 3 inches of light fine soil over it; sowing the seeds rather thickly, covering with glass until they were well up, hardening them off by degrees, and lifting them in patches to where they are wanted.

The greater part of these annuals might also be sown in March and the first days of April; but, as a rule, they will not come up so regularly, nor will they bloom continuously so late. When it is desirable to have them as early as possible, and the late-flowering is a matter of less moment, then make up a slight hotbed in the middle of March, cover with rotten dung and soil as stated above, dig and pulverise the ground well, and plant out in patches about the end of April. The best beds and margins of annuals we ever had were so managed, and though they bloom sooner, they will not continue in the autumn like those sown now in the open ground or under a little protection and transplanted.

2. Selection of annuals to bloom early in spring, by sowing in the third week of September, either where the plants are to stand or thickly on a border, hard below with about 4 or 5 inches of rather poor stiffish soil, which will lift in lumps early in the spring, or in the beginning of winter after the beds are cleared, well dug, &c.

Alyssum maritimum (Sweet Alyssum), white.

Anoda purpurea, 1 foot.

Cacalia coccinea aurea, 1 foot.

Calandrinia speciosa, rose, 6 inches.

Callichroa platyglossa, yellow, 9 inches.

Calliopsis, all the best, as mentioned above, except *Drummondii*, which rarely stands the winter.

Campanula, all the dwarf kinds, *Venus's Looking-glass*, &c.

Clarkia, the whole of the varieties; the pulchella group is harder than the elegans varieties.

Collinsia bicolor, *bicolor alba*, *bartsiaefolia*, and *bartsiaefolia alba*, *grandiflora*, *marmorata*, and all the species and varieties.

Collomia coccinea and *grandiflora*, red and saffron, 1 foot.

Delphinium, dwarf Rocket Larkspurs.

Eschscholtzia, all mentioned in previous lists.

Gilia, all from 1 to 1½ foot in height. The varieties of *tricolor* are best; but all the varieties of *achilleaefolia* and *capitata* are also good; the latter in good soil will reach 2 feet. Is a little rough.

Godetia, all previously mentioned, and as many more as may be deemed advisable. These sown in autumn might be planted thinly in beds, and bedding plants placed between them to fill up when the first were done blooming.

Iberis, all varieties of annual Candytufts.

Leptosiphon androsaceus and varieties, *aureus*, *densiflorus*, *luteus*, &c.; low-growing pretty plants.

Limnanthes Douglasii and others, as *grandiflora*, *rosea*, low things with yellow and rose flowers.

Lopezia coronata, rose, 1 foot.

Malcomia maritima (Virginian Stock).

Nemophila, all are suitable.

Nigella, all varieties, but best sown in spring.

Nolana, all varieties, best sown in April.

Papaver (Poppies), best in spring.

Sanvitalia procumbens, best in spring, black and yellow, 4 inches, trailing.

Saponaria calabrica, all varieties.

Silene, ditto, as already mentioned.

Viscaria, varieties.

Tolpis barbata (Yellow Hawkweed), best in spring.

Venus's Looking-glass of colours, blue, bluish, white, &c.).

These will need the protection of a few evergreen branches amongst them in severe weather in winter. The next best plan with these would be to sow in the open ground early in March; but they will bloom much later than those sown in autumn. A better plan to secure early and uniform beds in spring and early summer from spring-sowing, would be to sow in a mild hotbed early in March, with rotten dung below and fine soil above; then harden-off and fill the beds or rows, not with solitary plants but

with patches, rooted in and adhering to the rotten leaf mould and soil. The transplanting will promote dwarfness and free-blooming. Where there is the convenience of a few sashes early in the spring, this plan will often secure fine beds with less trouble than sowing in autumn. Autumn-sowing is the best plan for early blooming, where such conveniences as sashes cannot be had in the spring.

3. Annuals that require the assistance of heat and glass to give them a chance of forming a prominent part in the adornment of the flower garden. We shall divide these into two classes—those that are best sown in pots, and those that may be sown in boxes or on a mild hotbed. The first will also be the better of more heat than the second, and both will need pricking out as soon as they are large enough, unless sown sufficiently thin at first.

Those best sown in pots, are such as

Abronia umbellata, rose, 6 inches.

Acroclonium roseum, rose; and *album*, white. Everlastings. 1 foot.

Ageratum, chiefly the *mexicanum* varieties, as *nanum*, which is dwarf; *odoratum* and *celestinum* are next best.

Alonsoa grandiflora, *Warzewiczii*, scarlet, 2 feet.

Amaranthus bicolor, *tricolor*, 1½ foot.

Anagallis grandiflora, *Breweri*, &c.; blue; and other varieties, red, lilac.

Arctotis grandiflora argentea, silver leaves, yellow flowers, dwarf and creeping.

Browallia varieties, chiefly for greenhouse.

Calceolaria varieties.

Chaenostoma fastigiatum, rose, low, a few inches.

Cineraria maritima, silvery foliage.

Cleome brachysperma, white, 18 to 24 inches.

Clintonia elegans, *pulchella*, &c.; resembles *Lobelia* of the dwarf kinds.

Cobaea scandens, strong climber.

Cucumis, ornamental Gourds.

Cuphea of kinds.

Datura chlorantha, *Wrightii*, &c.

Dianthus, of the *Heddewigii* and *laciniata* group.

Eucnida bartonioides, yellow, 1 foot.

Heliotropium, varieties.

Humea elegans, for centres of beds and greenhouse; does best sown in small pots and potted on before planting.

Isotoma axillaris, blue, 1 foot.

Linum flavum and *grandiflorum*, &c.

Loasas of kinds, dangerous climbers.

Lobelia speciosa, and many other kinds.

Martynia fragrans, 2 feet.

Maurandya of colours, for pillars, climbers.

Mesembryanthemum of kinds and colours.

Nemesia floribunda, *versicolor*, and varieties, pretty low plants, white, yellow, and blue.

Nirembergia gracilis, *intermedia*, the first light lilac, the second purple, 1 foot or rather 9 inches in height.

Nycteria selaginoides and varieties, pretty low plants, looking like *Lobelia* at a distance, pinkish, bluish, white.

Oxalis rosea, a few inches high.

Perilla nankimensis, to have it strong.

Portulaca Thellusoni, and many varieties.

Primula sinensis varieties, for greenhouse.

Rhodanthe Manglesii, *maculata* (Everlasting flowers), rose, crimson, and yellow, 1 foot.

Ricinus of kinds, for fine foliage.

Solanum capsicastrum, for greenhouse, chiefly for the fruit.

Verbena venosa, *Aubletia*, and all varieties generally. The sooner they are sown the better they will bloom.

In the case of most of these, and especially as regards all the small-seeded ones, as *Lobelia*, *Calceolaria*, and *Portulaca*, we would fill the pots half full with drainage, then rough soil, then fine soil, gently pressed, water well a day before, sow the seeds on the slightly-dried surface, put a square of glass over the pot, and shade until the seedlings begin to appear. For all such small seeds the slightest covering of fine sandy soil should be given. In pricking-off, we often do so in little patches instead of single plants, which is easier done. None of these small seedlings should be watered overhead, but when dry, if not soiled as above described, the water should be poured in on one side, such as on an oyster-shell, so that the soil may be moistened without wetting the tops, or beating them down from the rose of the watering-pot, as that will make them damp-off to a certainty.

Larger seeds will require more common treatment; but from want of attention to minutiae, we have known seeds saved from the same plant distributed to several people, and some would raise plants from almost every seed, and others would not succeed in obtaining a plant.

Annuals to be sown in a gentle hotbed, hardened-off, and finally transplanted.

Antirrhinum majus and varieties will bloom in autumn.

Argemones, of species, must be planted young.

Blumenbachia insignis, blue.

Chrysanthemum, annual varieties, as *tricolor*, *aureum*, *Burridgii*.

Dianthus, as *chinensis*, and varieties of Indian Pink, &c.

Gaillardia, such as *pieta*, *nana*, &c.

Helianthus, double Sunflower.

Holcus saccharatus, for foliage.

Impatiens, garden Balsams, which thus treated make fine bushes.

Lophospermum, of sorts. Climbers; better, however, in pots.

Myosotis palustris and *azorica*, common and Azores Forget-me-not.

Nolana sub-cœrulea and other varieties.

Mathiola, the best German and large-flowering Ten-week, and other Stocks.

Pentstemons, different species and varieties, as *gentianoides*, *Murrayanus*, which thus will bloom as annuals.

Phlox Drummondii, many varieties, all beautiful.

Salpiglossis, many varieties. Make telling beds. About 2 feet in height.

Salvia coccinea and *Rœmeriana* are the chief kinds that will bloom freely the same season from seed.

Zinnia elegans, varieties, would make beds or rows of themselves; and the scarlets, crimson, and purples, are exceedingly beautiful. To these may be added the Peony and *Chrysanthemum*-flowered French Asters, and the Quilled German Asters, African and French Marigolds, and German Wallflowers, which come mostly double and semidouble, to flower in mild winters and the succeeding spring. Most of the above should be sown in the beginning of April, and a batch of them are a good resource to fall back on when a vacancy occurs.

I have taken up so much space that I must be satisfied in thus referring to some of the best annuals for ornamenting the flower garden, leaving those for the greenhouse for some other opportunity. The article, written by snatches, has many shortcomings; but I shall be glad, if by its perusal some of our enthusiastic gardeners in small places receive any hints as to how certain annuals may be best used for definite purposes. In general, when sown on the ground the plants are left far too thick.

R. FISH.

EARLY ARCHERFIELD MUSCAT.

I FORWARD for your inspection (April 24th) a sample of this Grape, which I think you will find to be quite ripe and fit for table. It is cut from a Vine which, as Dr. Hogg saw, has been forced under the following disadvantageous circumstances.

On the 12th of November I put a bed of warm leaves on the border of a Black Hamburgh-house, preparatory to its being started for the supply of Grapes about this time. The plant of Early Muscat from which the sample sent is cut, is growing in the house next to this early Hamburgh-house. Being anxious to put its early qualities to the test by trying it against the Hamburgh, I removed a pane of glass from the division which separates the two houses, and introduced the rod of the Muscat through the opening. This was done contemporaneous with putting the hot leaves on the Hamburgh-border both out and inside the house. The Muscat-house, in the border of which the roots of the Muscat had to act its part against the Hamburghs, was kept open at both top and bottom, as I did not want to start it till nearly two months after the Hamburgh-house. To prevent the cold current of air from acting more immediately on the stock of the Early Muscat, I wrapped a hayband round it; but in all other respects the house and border in which its roots are, remained as cool as it could be kept till the 31st of December, when the house was shut up and warm leaves applied, the same as was done in the case of the Hamburgh-house on the 12th of the previous month; so that in the matter of heat at the root the Hamburghs had about seven weeks of an advantage over the Muscat.

On the 24th November the Hamburghs had fire heat applied, while the house in which the roots of the Early Muscat were had no fire heat till the 20th January. Under these circumstances the race has been run. On March the 23rd the first faint sign of colouring was discovered in the Black Hamburghs, and on the 30th of March I have the following entry in my diary:—"Noticed Early Muscat changing soft and yellow." The Hamburghs are now fit for table, and the first will be cut on the 28th April, while the Muscats are as the sample sent, and which I send for your opinion as to ripeness. I have no hesitation in saying that this variety of Muscat will force as well and as early as the Black Hamburgh.

I may state that it is my intention to send a sample to the Fruit Committee which is to meet on the 5th of May. Probably I may send two bunches; and if your acute correspondent and able pomologist Mr. Rivers, or any other whose opinion is of value, could be present it would be gratifying, as I am not aware that in the ordinary course of forcing, Muscat Grapes of any variety were seen so ripe at so early a season.—D. THOMSON, *Archerfield Gardens*.

[The specimens to which Mr. Thomson refers were received on the 25th of April, and were perfectly ripe examples of a pure form of Muscat of Alexandria.]

THE AURICULA IN 1863.

HAVING received several communications publicly and privately relative to my favourite flower, I must take this medium of answering my correspondents, while at the same time I am enabled to have a chat on our prospects with regard to it.

To our two great Societies we Auricula-growers are much indebted for the stimulus that has been given to their growth, the results of which are abundantly evident in the increased number of exhibitors and the better quality of the plants produced at the spring shows. This applies especially to amateurs; Mr. Turner still holding the place of solitary grandeur and dignity as the only exhibitor amongst nurserymen. When we find that in one year only the number of amateurs exhibiting has been more than doubled; that plants which two years ago might have received a first prize are now to be found nowhere; and that other flower-lovers are evidently preparing for the battle, we may assuredly congratulate ourselves on the progress that is being made. Nor is this all. Some of the most experienced plant-growers I have seen lingering over the collections exhibited, and expressing their unqualified approbation; while ladies, to whom the flower has been a stranger, have so stopped to gaze at the exquisite beauty and novelty of the flowers, that it has oftentimes obstructed the thoroughfare—no difficult matter in these days of distended garments—not that I think at first it is a popular flower with the gentler sex; there is not, perhaps, enough of that gracefulness of appearance which they ever look for as a *sine quâ non* in Flora's domain, but it is one that is sure to win upon them; their neatness and refinement appealing to their love of all that is elegant, and they become after a while its most enthusiastic devotees.

The demand for the Auricula has so greatly increased that neither at Slough, Falkirk, nor in Lancashire, has it been possible to obtain plants of any size; for the Auricula is not a plant that can be propagated as one likes, you must bide its own time. All these circumstances combined tend to make me believe that we are on the eve of seeing the old days of poor John Dixon revived; and that in and around our metropolis Auricula-growers will soon be as numerous as they used to be in "days when I was young," and "The Horns," Kennington, used to be the scene of many a pleasant meeting.

The opinion that I ventured to express, and for which some northern growers were almost prepared to give me Lynch law—that a National Auricula Show would never be again held, is, I think, likely to be more near the fact than our northern friends believed. They this week hold one called such; and although their rules have been somewhat modified, and three-legged Manx Auriculas are not to be exhibited, yet few if any of the really southern growers will venture so far north, or, indeed, as a general rule, would they be able to exhibit at a time so far advanced as the last day of April: and hence I imagine the Show will be to all intents and purposes a northern one; but I hope and believe that ere long we shall be enabled to see a southern or metropolitan exhibition. There is already a South London Auricula Society, where the flowers are exhibited without

any charge and without any money prize, solely for the purpose of making the flower more popular. This may very well be enlarged by-and-by; and I am quite sanguine as to the practicability before long of attempting something of the sort.

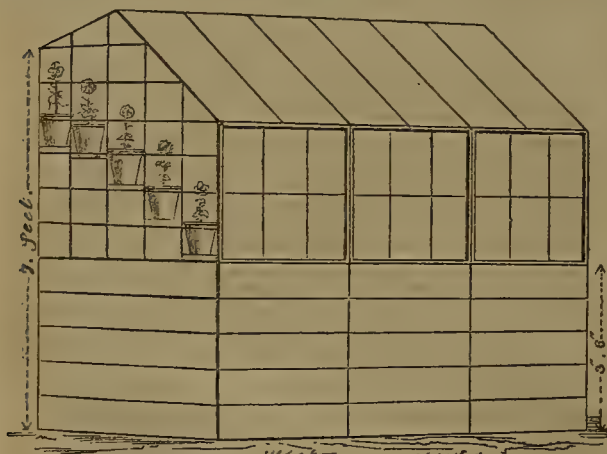
"What has become of the Alford Auriculas?" In answer to numerous inquiries on this point I may say that the whole collection has passed into the hands of Mr. Charles Turner, of the Slough Nursery. My late and ever-to-be-lamented friend possessed the most varied if not the most extensive collection of any amateur in England; and, indeed, I hardly suppose that in the whole kingdom there was one which combined so many varieties. These, added to Mr. Turner's already noble "stud," will make his finest collection in the world. As I know the circumstances of the purchase I may just say that it was made without the smallest hesitation; the terms proposed by Mr. Turner being such as his liberal mind suggested as a fair value, and such as the representatives of my dear friend felt few but Mr. Turner would have made. And now those pets over which he had spent many a pleasant hour have changed their home, and he who was looking on to see their opening beauties has left us for ever! Few Auricula-growers who knew him but will, in looking over their stock, think of him. Well indeed will it be for us if, like him, we have thoughts such as he had of higher and better things.

"Can any better frame than that described in the *Cottage Gardener's Dictionary* as Dr. Horner's be recommended for them?" Yes, most decidedly. The very best frame that Auriculas can be grown in is one planned by my friend the Rev. J. Bramhall, Mr. Jeans's brother-in-law, fully described and figured in either the *Florist* or *Gossip for the Garden*; while Mr. Jeans's own notion of an Auricula-frame is given in the *Florist* for 1861, page 273. My own opinion and experience, however, are in favour of growing them in common garden frames, taking care that the glass is large, so as to prevent drip, and then to have an Auricula-house for blooming them in, such as I myself described in the *Florist* for 1860. Since that time I have had one made for myself; it is now full, and a prettier sight in the way of

pered by exposure to the air, I consider nearly as good for them as a gentle summer shower; but by all means let them have all the air possible.

"Where can good plants of the leading kinds be obtained?" Happily the demand for them has so increased, that this becomes a difficult question to answer. Mr. Turner has made a large addition of nearly five hundred plants to his stock, and as many of them are, doubtless, such as he has already, plants may be obtained from him. Mr. Lightbody, of Falkirk, has also a very fine collection, and there are other growers about there. Messrs. Holland & Bayley, of Chadderton, near Manchester, can, I believe, execute orders for some kinds, although, unfortunately, I could not obtain what I wanted from them; but I would advise all who wish to purchase to be sharp about it; it will be next to impossible to obtain plants by-and-by. Where persons are intending to commence their growth, our advice is to procure some of the cheaper kinds at first, and then when one finds that he can manage them, to go on by degrees to the more expensive sorts.

I have thus run through most of the points on which my opinion has been asked, and cannot forbear saying that I hope no one will be deterred from growing them through any supposed difficulty of culture. They require care, but not so much as Carnations and Picotees, and some other flowers. The difficulties have been greatly exaggerated, owing, I think, in a great measure, to the nasty messes that used to be considered necessary to grow them in. Attention to cleanliness and good wholesome food will do as much for them as these will for ourselves, while over-excitement will act injuriously on them as well as on us. Nor, again, are they so expensive as some would suppose. You may, of course, give high prices, but then if you wish to part with them, you can obtain the same. There are kinds such as Maria, Lyeurgus, George Lightbody, &c., which will command their price for years to come, while the commonest sorts growers for sale will always be glad to purchase. I might, had I been so disposed, have over and over again sold mine, and that at good prices. This can be said of few florists' flowers. Tulips are quoted at high prices, but to sell them is another matter. Altogether, taking them in their various aspects, considering their extreme beauty, the comparative scarceness of good collections, and their success commercially (if one may allow such a mean notion to enter into the growth of flowers), I still hold by my first love, and after five and twenty years of constant affection, maintain that no florists' flower is more worthy of general cultivation than THE AURICULA.—D., Deal.



flowers I would not desire to see. Being placed on a level with the sight, the plants can be seen without the trouble of stooping over them. The front sashes can be drawn up so as to give air without allowing the cold wind to blow upon the plants; and if care be given to ventilation and shading, they may remain in this blooming-house during the summer. It may be, perhaps, objected that this is only suitable for a large collection; but if the house be made small at first, it can always be added to.

"Will it hurt Auriculas to let them have gentle summer showers?" My own practice is never to allow them to get rain, not that I think that gentle rain would hurt them, but I consider it to be safer to lay down this rule, called out so much as I necessarily am by professional duty, that my frames should always be down on the least approach of rain. People are such bad judges of what a shower is that I cannot trust to the judgment of others, and by this means I preserve my stock from being saturated with heavy rains. Were I at home, and could run out and cover them when they had had enough, it would be a different thing. But careful watering with rain water when it is to be had, or, at any rate, with water that has been tem-

INVITATION TO MR. ROBSON.

I HAVE amused myself for some weeks past in writing articles in reply to your contributors. It is now time to finish the argument and unmask myself, although to a large portion of your readers I feel it is no unmasking. Mr. Robson persists in referring to old recollections. All he says is, doubtless, true enough, and his friend when he "shook his head," was also truthful. The fact is, he had not discovered the modern simple method of growing Peach and Nectarine trees in pots. But why do I say modern? Loudon tells us in the "Gardeners' Magazine," that Peach trees in pots were grown for twenty years with success by merely giving them surface-dressings. The thing is not new, but the method is simplified and systematised, if such a grand word may be applied to a very facile mode of culture.

To end this discussion, which has given me great amusement—for I am always amused with platitudes advanced with sober seriousness; I fear it is the remains of a love of mischief which when a boy I was famous for—I hereby invite Mr. Robson to come and see me, and my trees, and my houses, and my various "dodges" which I carry on from year to year, and which I hope to do till the "must-be" comes. I shall be happy to receive him with a cheerful welcome, and show him Peaches and other trees in pots standing on a hard clay floor—fed merely, and amply fed, by surface-dressings; others planted out; others on a loose surface to root in; in short, I will show him all that I have. The trees are now full of young fruit not yet thinned, with the exception of the Apricots, of which many thousands have been consigned to tarts. He should come now—it is but a day's journey—and again in August, and then we can taste and argue about flavour just as two old gentlemen should do.

With regard to the flavour of Gooseberries, I have Mr. Robson "on the hip." No Lancashire Gooseberry or Gooseberry in Lancashire, and I have tasted many, ever equalled a Red Champagne or Warrington Red grown in the south of England, leaving the White Fig Gooseberry and some others out of the question.

If Mr. Robson will not come to see me I shall say he is a firm-minded old gentleman, who, "if convinced against his will, will be," &c. (*vide* "Hudibras"); but I trust he will favour me with a visit, all I ask is a day or two's notice. The Harlow station is the most convenient for my house.—THOS. RIVERS.

ADIANTUM MACROPHYLLUM.

EVEN at the present time, possessed as we are of beautiful Ferns of the *Pteris tricolor*, *argyræa*, and *albo-lineata* stamp, I think there are few who will feel disposed to differ from me as to the beauty of the fronds of really lovely hue of the old Jamaica Fern introduced some seventy or eighty years ago—the *Adiantum macrophyllum*.

Generally, and save when in a small pot, I have been in the habit of considering this Fern difficult of culture, a rather misfitted subject, acknowledging very reluctantly the rule of those of the blue apron; and yet it will under some, and those the most simple ways of treatment, adapt itself to the wishes of the cultivator.

I commence by supposing that the operator has a thriving young plant tolerably well established in a 48, or, better still, 32-sized pot, say in February; the fronds of last season's growth are decaying. I would take this plant, and giving it a shift into a 24-sized pot, place it upon an elevated pot, slate, or stage, near the cooler end of the stove, moderately supplying it with water. It may remain in this position about a month; when, if from the necessities of the stove plants generally, in the same compartment, the heat is not then advanced about 10°, the *Adiantum* should be removed so as to obtain that temperature. Probably about this time young fronds will have pushed. If there should be from eight to twelve with the pinnae expanded in part, then cut away the whole of the old fronds of last season. Divested of its old fronds it will make a stronger start, and must now receive a slight increase of temperature. I would let it remain in this situation about another month, gradually watering it more frequently.

The above treatment would bring it on into April, when the days are long enough for a further advance of heat. I would now, in a shady situation, give it 60° by night, from 75° to 80° by day; and an essential point is that the pots be so plunged in moss around the pipes, or in a gentle hotbed, as to insure the roots being in a temperature of 70°. From thenceforward, until the plant has done growing, deluge it well with water, and gently. The influences of these combined inducements will show themselves in the form of numerous fronds arising from the plant.

Thus continue each season; and in the following February I would give the plant a liberal shift into, say, a 12-sized pot, giving it a six-inch the following year, when it should be a fine specimen compared with what we meet with generally—say a yard in diameter, and having fronds all fresh in their beauty, and attaining some 14 inches long, such a pot averaging some seventy of such fronds.

Care must be taken that no particles of water be allowed to stand on the fronds; otherwise they very quickly fade, and at times even rot or fog-off.

The soil it appears to like best I compound of some good rubbly charcoal, not pounded too small; rough little squares of a fibry sandy peat, having the weightier part sifted out; some good fibrous loam, with a fair proportion of silver sand, and added to these a fair proportion of small potsherds.

In potting I half fill the pot with charcoal and potsherds, and intermixed with these a few of the finer lumps of fibry peat. The latter should be placed in carefully, packing each as closely as possible without breaking them. Then, before the old ball is placed upon these, take off all old substances where practicable without injuring the roots; and fill up with the mixture generally, taking care to finish off at the surface with some of the finer material.—W. EARLEY, *Digswell*.

EARLY BLOOMING OF THE HAWTHORN.—As a proof of the forwardness of the season, I beg to state that yesterday, April

25th, I gathered a piece of Hawthorn with the blossoms fully expanded from a hedge near this village. I have once gathered it on the 27th of April, but I never before saw it so forward as it is this year.—ROBERT S. STEDMAN, *Sharnbrook, near Bedford*.

HARDY ANNUALS.

IN THE JOURNAL OF HORTICULTURE of 31st March I have read a list of garden annuals, at the foot of which is a suggestion for other ideas to be thrown out on the subject. The following I know to be good showy things in that way, and such as may be grown by any one.—B. H.

<i>Athanasia annua</i> , 1 ft., yellow.	<i>Lasthenia californica</i> , 1 ft., yellow.
<i>Bartonia aurea</i> , 1 ft., yellow.	<i>Lavatera</i> , red and white, 2 ft.
<i>Brachycome iberidifolia</i> , 1 ft., greyish blue.	<i>Leptosiphon</i> , various, 1 ft.
<i>Clarkia pulchella flore pleno</i> , 1 ft., rosy purple.	<i>Linum grandiflorum coccineum</i> , 1 ft., crimson.
<i>Chrysanthemum Burridgeanum</i> , 2 ft. white and crimson.	<i>Lupinus</i> , various, 2 ft.
<i>Calliopsis bicolor</i> , 2 ft., yellow and brown.	<i>Malope grandiflora</i> , 2 ft., crimson.
<i>C. Drummondii</i> , 1 ft., yellow and brown.	<i>Nasturtium</i> , dwarfs—Cattell's crimson; Tom Thumb scarlet, ditto yellow, ditto Beauty; <i>Nasturtium Dwarf Spotted</i> .
<i>C. coronata</i> , 1½ ft.	<i>Nemophila insignis</i> , 6 in., blue.
<i>Centranthus macrosiphon nanus</i> , 1 ft., pink.	<i>Oxyura chrysanthemoides</i> , 9 in., yellow.
<i>Collinsia bicolor</i> , 1 ft., lilac and white.	<i>Petunia</i> , mixed.
<i>Convolvulus tricolor splendens</i> , 1 ft., purple.	<i>Phlox Drummondii</i> , mixed.
<i>Dianthus chinensis</i> , 9 in., mixed reds.	<i>Poppy</i> , Dwarf French, 2 ft., mixed.
<i>D. chinensis Hedewigi</i> , 9 in., mixed reds.	<i>Saponaria calabrica</i> , 1 ft., pink.
<i>Erysimum Peroffkianum</i> , 1 ft., orange.	<i>Scholaria californica</i> , 6 in., yellow.
<i>E. Arkanianum</i> , 1 ft., yellow.	<i>Schizanthus</i> , mixed, 1½ ft.
<i>Feverfew</i> , double, 1½ ft., white.	<i>Silene pendula</i> , 9 in., pink.
<i>Godetia rubicunda</i> , 2 ft., purple.	<i>Sphenogyne speciosa</i> , 6 in., yellow.
<i>G. Schamini</i> , 2 ft., white.	<i>Tropaeolum Caroline Schmidt</i> , scarlet.
<i>Helichrysum compositum maximum</i> , 2 ft., mixed.	<i>T. Brilliant</i> , scarlet.
<i>Iberis umbellata sanguinea</i> , 9 in., crimson.	<i>T. Schultzi</i> , scarlet.
<i>I. coronaria</i> , 9 in., white.	<i>T. Barkeri</i> , mixed.
<i>Ipomæa Burridgi</i> , rosy crimson.	<i>T. Scheurmannianum</i> , buff and brown.
<i>I. atro-violacea</i> , purple. (Climbers).	<i>T. Scheurmannianum carneum</i> , buff and red.
	<i>T. Lauderii</i> .
	<i>T. canariense</i> .
	<i>Viscaria</i> , mixed, 9 in.
	<i>Zinnia elegans</i> , 1½ ft. mixed.

ROSES IN THE SUBURBS.

IN continuation of my former papers for suburban Rose-growers, I shall proceed to give the results of the past winter with me as exhibited in the behaviour of several favourite kinds. Of course they may not correspond with the observations of others; but it is only by the comparison of various experiences that reliable data can be established. From October last to the present time we have enjoyed a singular immunity from severe or continued frosts; yet we have not been without two or three sharp spells, which have left their effects upon my limited rosery. This has been particularly the case with small plants on their own roots turned out of pots during the last summer, several of which have succumbed to the influence of cold or damp. Damp in the early spring months is extremely fatal to young plants, which dwindle and go off between "wind and water," as the gardeners term it; and the method by which I hoped to counteract the enemy (by placing a mulch of charcoal round the collar), has not in all cases proved successful. H.P.'s *Anna de Diesbach*, *Duc de Cazes*, *Princesse Mathilde*, and *Eugène Appert* on their own roots are among the sufferers; the first-named, especially, seems really delicate in that form; the others, though usually considered hardy, have followed in its wake. Perhaps when the last frosts occurred they were too forward and full of sap. Upon the *Manetti* the case has been quite different with the same varieties, except *Diesbach*. They are flourishing and even in bud: hence I conclude that for amateurs, whose space only allows them to cultivate limited collections, the *Manetti* is the most advantageous stock. B.'s *G. Peabody*, *Aurore du Guide*, *Comice de Seine et Marne*, *George Cuvier*, and *Madame Helfenbeim* (similar kind of plants to the H.P.'s), are also among the departed; as well as *Teas*, *Mélanie Oger*, *Goubault*, *Viscomtesse de Cazes*; *Noisette*, *America*; and *C. Mrs. Bosanquet*. These young plants appear to require more bottom heat than is natural to the ground in spring to start them at that period. I get on very unsatisfactorily with those beautiful *Roses General Washington* and *Madame Furtado*. They neither grow nor open well, and I fear will not do for us townsmen.

What will be the consequence of a continuance of the present

weather upon the Rose shows I am at a loss to imagine. In my little plot there are upwards of a dozen varieties of established plants in full bud, to be cut off, I fear, by late frosts, or to be worthless from premature development. Their enemies also keep pace with them. The pernicious black grub is in its old haunts, destroying the embryo flower, and the aphid is becoming rampant. I can, however, effectually keep it down. I shall name the kinds so forward here, as they may be considered early varieties, and worthy of notice on that account under favourable circumstances. H.P.'s, Anna Alexieff, Jules Margottin, Victor Verdier, Madame Domage, Madame de Cambacères, Triomphe de Paris, Triomphe des Beaux Arts, Général Jacqueminot, Pius IX., Reine des Violettes, Duchess of Norfolk, Senateur Vaisee; and of 1862, Monte Christo and Madame C. Joigneaux; Bourbon, Catherine Guillot; and of Teas, Gloire de Dijon and Madame Willermoz. The latter, on its own roots, seems very hardy and robust, having withstood the same adverse conditions under which so many others have failed. Of 1862, Madame C. Wood, Notre Dame de Fourvières, Souvenir de Comte Cavour, Charles Lefebvre, Maréchal Vaillant, F. Lacharme, and Louise Darzins are all very vigorous and forward; and I think, as I have said before, that 1862 will have given us an unusual number of superior Roses. Perhaps the plan I have adopted of hanging a breadth of tanned netting, about 6 feet high, round the garden may have had something to do with their early development. Roses like plenty of air, but cold draughts do not agree with them better than with the human species.

Knowing how eagerly scraps of information respecting novelties are sought after by enthusiastic cultivators, the following remarks upon what I have seen of them at Messrs. Frasers', Wm. Paul's, and Paul & Son's, may not be without interest. Your able contributor, "D., of Deal," gave us an interesting descriptive list of the forthcoming competitors for popular approval in a number of your Journal towards the close of last year. Of course the produce of the forcing-house is no criterion of ultimate results; still, if a variety does well there, it may be assumed likely to prove a success. The most promising of those I have seen are B., Louise Margottin, a beautiful kind of a delicate and desirable colour, somewhat in the style of Louise Odier, as most of new Bourbons worth anything are; H.P.'s, Jean Goujon, Baron de Rothschild, Le Rhone, Madame Wm. Paul (a purplish-crimson flower, very double, and appears to be an acquisition in its line), Madame C. Kod, not particularly novel, and Duc d'Anjou.

It is somewhat surprising that Rose-amateurs do not more frequently avail themselves of the floral treats within their reach. The first-rate nurseries are always cheerfully opened to respectable visitors, who will usually find plenty of choice varieties, to say nothing of other objects of interest, in bloom in the forcing-houses at this time of year; and those who wish to extend or complete their collections will now have the choice of the frames for plants in pots to turn out during the month. A word of advice respecting the best method of doing this. Be sure the soil is light enough. The young roots require some free and open, though rich stuff, to deal with the first season, and it is a great assistance towards establishing them, to protect and shade the plants by means of a large flower-pot, or something of the kind turned over them for a few days, leaving it off gradually, first by day, and then altogether.—W. D. PRIOR, *Homerton*.

THE PANSY.

I CANNOT remember so far back as can your correspondent, "DAHL, Manchester," but I knew Mr. Thomson well, having been a neighbour of his some years ago. I regret to tell "DAHL," that Mr. Thomson has been dead about six years. I have never seen since I left Iver any collection of Pansies that equalled Mr. Thomson's. If I send for seed saved from first-rate flowers I never raise a seedling worth saving.—GEO. HOLMES, *Woodchester*.

ENCOURAGEMENT TO PLANTERS.—The late Sir Watkin Williams Wynn planted between 1814 and 1819, on the mountainous lands in the vicinity of Llangollen, situated from 1200 to 1400 feet above the level of the sea, 80,000 Oaks, 63,000 Spanish Chestnuts, 102,000 Spruce Firs, 110,000 Scotch Firs, 90,000 Larch, 30,000 Wych Elm, 35,000 Mountain Elm, 80,000 Ash, and 40,000 Sycamores. The profits arising from the thinning of these trees have already far more than paid for the expense of

planting and fencing; while the crop remaining is valued to pay a much higher rent for the land, from the period of planting to final clearing away, than could have been got for it from any other purpose to which it could have been applied.—(*Dublin Agricultural Review*.)

FLUES VERSUS HOT-WATER PIPES.

I WILL call your attention to that part of "E.'s" article, page 211, which Mr. J. Robson advocates. Unluckily "E." has omitted giving the length of the flue, the height of chimnies, size of fireplace, &c., and the last two would make a great hole in 50s.; for want of which information, I hope he will not take it amiss if I try to show the actual cost per yard, leaving the fireplace and chimnies for the present.

Now, the sides are formed of bricks laid flat, 12 inches deep inside. These would require sixteen each. Again, he fails to inform us as to what the bottom consists of. May I, therefore, allow sixteen bricks for the surface of the bottom? and as it will require to rise as it extends, we will say two layers, which makes thirty-two for the bottom. We now want three firetiles 18 inches by 12, which will be 10d. each, making with the cost of the bricks a total of *3s. 6d. per yard.

For my part, in the formation of a small flue, I would have tiles put on two bricks, placed edgewise so as to allow the air to circulate under the flue, for a bottom; bricks placed edgewise for the sides, as the flue will then give out more heat at the sides than in "E.'s" plan, who has nearly all his heat from the top. I should then require firetiles 12 inches by 12, at 6d. each, which would make a total of *2s. 6d. per yard.

So much for flues; and I will now proceed to investigate the price per yard of water-pipes to heat a house a little larger than "E.'s." For this purpose I would choose three-inch rain-water pipe, which I can procure easily at 1s. per yard; the return-pipe being reckoned, makes it 2s., and the average cost per yard for joining the pipes together with hemp and Portland cement, 3d., in all *2s. 3d., leaving 1s. 3d. per yard in my favour as compared with "E.'s." Now (for materials, labour of setting the boiler, and building chimney I shall cancel, by the building of fireplace and chimnies in "E.'s" case), there only remains the boiler, a small one, which may be had for much or little. I will only add that I can obtain more heat in less time, with less trouble in cleaning, and a great saving in fuel. These things speak for themselves.

The Polmaise system was, and is, I dare say still, in favour with Professor Lindley. I am very much surprised it did not meet with a better reception after all that has been spoken in its favour. The best to work that I ever saw is at Messrs. Lanes' Nurseries, Berkhamstead, which is the same one so minutely described some few years since in a contemporary. They omitted, though, to state the enormous quantity of fuel consumed by it in one day, compared to what would have been required had there been hot-water apparatus fixed instead.

By-the-by, I see no reason why I should not try to correct a common error made in fixing hot-water pipes. Many people fix their flow-pipe on a dead level, allowing the return to sink gradually from the extremity to the bottom of the boiler. Now, we know that if a pipe leaves the summit of the boiler, rises perpendicularly, say for 20 feet, and sinks at once to the bottom of the same, we obtain a superlative circulation; but the more the pipes decline to the horizontal position, the less rapid the circulation, and the less heat do we obtain. Now, why do we not have the pipes to rise at an angle, say of 10°? Simply because, if carried to any distance, the pressure on the bottom of the boiler and flow-pipe is so great, owing to the height of the water, that something must give way unless everything is made proportionately strong. I, therefore, advocate, a rise, according to the distance the pipe is required to go, of for twenty yards 1 inch in three yards, for forty yards half an inch in three yards, and for a hundred yards three-eighths of an inch. By so doing you obtain a ready circulation, and avoid misfortunes similar to Mr. J. Robson's (see page 292.)

I recollect M. Louis Van Houtte, nurseryman, Ghent, relating an incident attending the fixing of a hot-water apparatus in a very large conservatory at St. Petersburg. He received a letter requesting him to go there at once, as the severe weather was coming on, but they could not get the water to circulate, being obliged to pour the water in at the boiler end, and actually pump it out at the other, so as to keep the frost out! Being

* These prices are the lowest I can get the work done for in the country.

unable to leave his business, and suspecting the cause, he at once wrote to them to make the flow-pipe rise so much in such a distance, which when done was found to answer better than a dozen pumps.

Might I ask "E." what it would cost to heat with a flue a house 60 feet long by 18 broad? Also, the quantity of fuel consumed in a week, and the heat he could obtain in a given time? If not too low in cost, I will try to have hot-water pipes to heat the same for less than four times his expenditure.—J. E. L., JUNR.

HYBRIDISING RHODODENDRONS AND FUCHSIAS.

I BEG to thank your correspondent, H. H. Glenville, in your Number, April 7th, for having corrected me in replying to an inquiry the preceding week on Rhododendron culture. At the same time I think I have been misunderstood in the views I took on hybridising, and possibly when I further explain the matter our opinions on the subject may be found both alike.

I stated that seedlings from hybrids having some affinity to each other, were more likely to do well than when the cross was between parents differing widely from each other, and I cited Fuchsias as an instance of failure; but in doing this I by no means denied the likelihood of success between such varieties as Clio and Queen of Hanover, for although I am not acquainted with one of them, I conclude they are fashionable varieties of the greenhouse class. Cross-breeding as it is called is a misnomer here, the relationship between the varieties rendering such a proceeding comparatively easy; but try a cross between two distinct species, as *Fuchsia corymbiflora* and *F. microphylla*, and if that succeed then there is cross-breeding in the full sense of the word. It was extreme crosses like this that I thought would not answer in Rhododendrons—say, for instance, a cross between *R. catawbiense* and *R. ferrugineum*, or any other widely different species. These were the crosses that I said were not likely to furnish a useful progeny. I am glad, however, that Mr. Cox has given us his experience on the Sikkim kinds. No one that I am acquainted with is better qualified, and I hope he will favour us with other notices on plants cultivated at Redleaf. No doubt in a short time the Rhododendrons there as well as elsewhere will be magnificent. I am glad to hear of their doing so well in Ireland. There, are, however, some places where they will not succeed unless earth suitable for them be obtained elsewhere, and that sometimes at long distances, and even there they can hardly be said to be so much at home as when in a soil natural to the place.—J. R.

PETUNIAS FROM NEW YORK.

A KIND friend to horticulture, whose name is appended below, having sent a package of plants to our worthy coadjutor, Mr. Beaton, who, all lovers of gardening will be sorry to hear, is suffering from a long continued illness, the plants have been kindly consigned to my care; and I can only thus publicly convey my thanks to the donor, and append his remarks on the plants, which our worthy transatlantic cousin gives in a humorous style every way becoming the profession he patronises.

Although the plants sent are named after individuals who figure prominently before both the Old and New Worlds, and, consequently, call forth political feelings of a party nature foreign to the peace-loving profession our periodical so truly advocates, it must, nevertheless, be conceded, that amidst all the tumult of party feeling, irritated now and then by events taking place elsewhere, our New York friend writes with a tone of humorous playfulness, and does honour to an antagonist of his country, which we are not always disposed to do at home. Whether his prediction of the future governors of the far west be true or not, the absence of asperity in a letter (half gossiping, perhaps intended), itself speaks of the candour of the writer, who amidst the strife of civil warfare still finds time to follow out the more humanising calling he is evidently so great an ornament of. It will be best to give his own introduction to the Petunias, which, as will be seen, were in a letter intended for Mr. Beaton, who had some months back given a favourable opinion of them, from a plate that had been sent him. Writing from New York, our correspondent says—

"I am certainly highly gratified by your complimentary notice of the plate of my Petunias, which I trust will turn out

all that you desire. I have now great pleasure in attending to your request, by sending you the two honourable gentlemen, the 'Presidents,' and also some of our military celebrities, by which you will readily perceive that we are at present a warlike people.

"No. 1. *Abe Lincoln*, President of these United States.

"No. 2. *Jeff. Davis*, present President of the Southern Confederacy.

"No. 3. *Gen. McClellan*, our next President that is to be.

"No. 4. *Little Mac*. We will presume he is the son of the General, further comment is unnecessary in his behalf.

"No. 5. *The Zouave*. This is not the original, as he has nearly disappeared from constitutional debility. Having sprung on the paternal side from rather a slender race (*Nierembergia intermedia*), still his blood circulates in the veins of all this strain of Petunias.

"Now, my dear Sir, I have said about enough, and complied with your request to the best of my abilities—put both Presidents into your hands, with the apparent succession and his supporters, which you can harmonise at your leisure in your own garden, on the banks of the Thames, without the trouble of a disagreeable passage across the Atlantic. I sincerely trust they may all reach you alive, that you may be enabled at some future day to report progress how they succeed under your benign influence.

"The two McClellans are double flowers; the elder very double, the junior half-and-half (that would do as a sign for the 'Hand and Flower' at Hammersmith). The others are such as you see on the plate.

"I have put in the package two of our native Ferns, *Lygodium palmatum*, and *Asplenium rhizophyllum*, as I know you are fond of such not-very-plenty things.

"I will shortly have the pleasure of calling to your notice a new yellow Rose, a seedling off *Tea Saffrano*, much the same in habit of growth, and equally free in flowering, only a little more double, of a deep canary colour, and strongly Tea-scented. This is altogether the best yellow Tea Rose that I have seen.

"I will send you a plate when it is figured. Trusting this may reach you in the enjoyment of good health, and fully prepared for the season of the grand exhibitions,

"Believe me, my dear Sir,

"Yours very truly,

"ISAAC BUCHANAN."

Our worthy correspondent will, no doubt, be pleased to hear that the plants came safely to hand; and although one or two of them have succumbed to an ordeal so trying to small, half-succulent plants like *Petunia*, in thumb-pots, still by the duplicates sent all the kinds are alive and doing well, as likewise are the two Ferns; and it is only fair to bear this public testimony of the admirable packing by which a small case of plants so young and tender have endured the long confinement of a transatlantic voyage, and some delay after reaching England. Of their merits, it is, of course, too early yet to venture any opinion, but I will at a future occasion do so, and I have no doubt but they fully bear out all that has been said about them. At the same time our New York friend, if he has not been in England lately, must bear in mind that improvements have been going on with the *Petunia* here as well as with him, that the varieties held in high repute three or four years ago, have been succeeded by others much their superiors, the double ones especially being much improved. Nevertheless, due justice shall be done to our far-travelled specimens, and we hope the warlike feeling which has called into existence the names given to the innocent flowers noted above, may have entirely subsided ere the report of their successful flowering here has been wafted across the Atlantic. Their merits, nevertheless, shall be duly recorded; and I believe the readers of *THE JOURNAL OF HORTICULTURE* will be exceedingly glad of communications from the other side of the water making their appearance from time to time in its pages. The present is, therefore, we hope not the last from the party who has forwarded the above communication together with the plants he has sent.—J. ROBSON.

THE MERITS OF AN ORCHARD-HOUSE.

THE discussion as to the value of orchard-houses has been renewed lately, and a good deal has been said in their disparagement by those who think unfavourably of them in a remunerative point of view. To try the question on this issue alone might, probably, turn the scale against them, as there are, perhaps, not many (Mr. Rivers and a few others excepted) who are skillful enough to have year after year their trees in full bearing.

I know I am repeating what has been stated by many of your correspondents when I say that the real value of the orchard-house to the cultivator of limited means is the opportunity thus afforded him of growing a greater number of different kinds of fruit trees than he otherwise could have room for, the protection against spring frosts, and the facility with which he is enabled to place the different sorts in the soil most suitable to their various requirements.

I have a lean-to orchard-house 15 feet by 8, without artificial heat, and it is thus filled—viz., two Figs in the border, trained to the back wall, three Vines in the border in front; three Peaches, two Nectarines, five Plums, and one Mulberry in pots. The Figs are Angélique and Brown Turkey, and have about a dozen and a half of fruit on each, already of good size, which will, no doubt, ripen well. Only two of my Vines are in bearing, the other being too young; the kinds are Purple Fountainbleau and Muscat St. Laurent, which bear and ripen admirably, the former especially is a most prolific kind, and the latter has a true Muscat flavour. Contrary to the experience of "DUCKWING" in your paper of the 14th ult., my Peaches and Nectarines are, upon the whole, this year, a failure. Although they blossomed most beautifully, one tree, the Shanghai, is an exception, and is well studded with fruit fairly set. The Plums, however, are and have always been with me a decided success.

My garden soil is of a loose friable nature, and though Plums generally blossom profusely they very seldom yield a crop. I, however, fill my Plum pots with soil, half of which is the strongest clay I can get, mixed with garden soil for the other half. It generally cakes pretty stiff, and the fruit set beautifully; I have two Reine Claude de Bayay (a most exquisite fruit), one Jeffer-

son, one Coe's Golden Drop, and one Green Gage, with as much fruit set as they can ripen, and now of the size of small peas. Let "DUCKWING" try this, and I think he will succeed with Plums.

The greatest enemy to be contended with is a small caterpillar, which begins to make its nest in the leaf as soon as it begins to unfold, and to this it attaches the nearest embryo fruit, which it soon eats into and destroys. The trees require to be daily gone over by hand for a week or two when the fruit is setting and the worms destroyed.

I have been unsuccessful in cultivating the Mulberry in the open ground, but I have a nice compact tree between 3 and 4 feet high, in a pot, which bears regularly every year. The fruit is hardly developed yet, but appearances indicate from five to six dozen berries—no great quantity certainly, but sufficient to furnish a *bonne bouche* occasionally. I may mention that although the tree has been in bearing for several years it has never yet shown male blossoms, and the fruit is, consequently, seedless.

I had almost omitted to say that I have besides the above, for ornament, two double-blossomed Chinese Peaches, from which I sometimes obtain a few fruit, and a Clematis lanuginosa and C. azurea grandiflora, which prolong the gay appearance of the house now that the fruit-blossom is over.

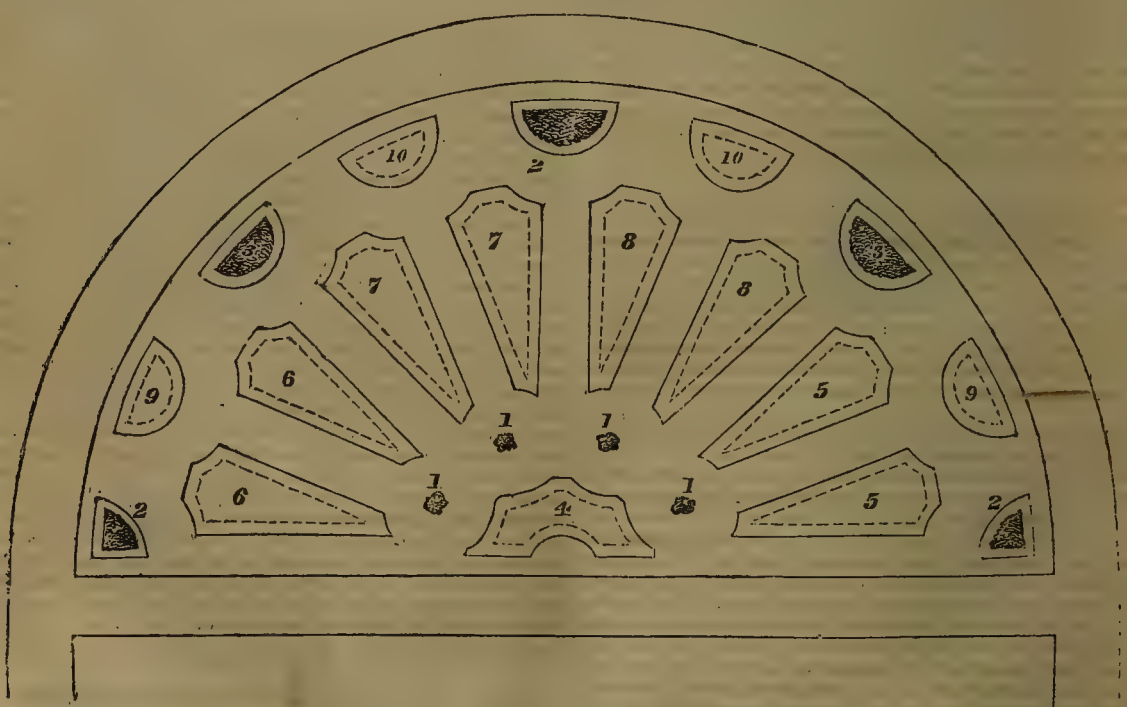
I certainly sympathise with the genial feelings so well expressed by Mr. Rivers in his communication of the 22nd of March; for, independent of the fruit to which the cultivator looks forward, he has in the spring the finest floral display any greenhouse can furnish, besides many accompaniments of a delightful kind to a lover of nature.—J. F., Haddington.

GARDEN PLANS.

THE accompanying drawings illustrate two designs which have recently been furnished by Mr. J. W. Chapman, of Richmond, Surrey, for Mrs. Millett-Davis, of Garston Lodge, near Liver-

pool. It may be observed of the first, that had there been room this design would have looked well if the circle had been complete.

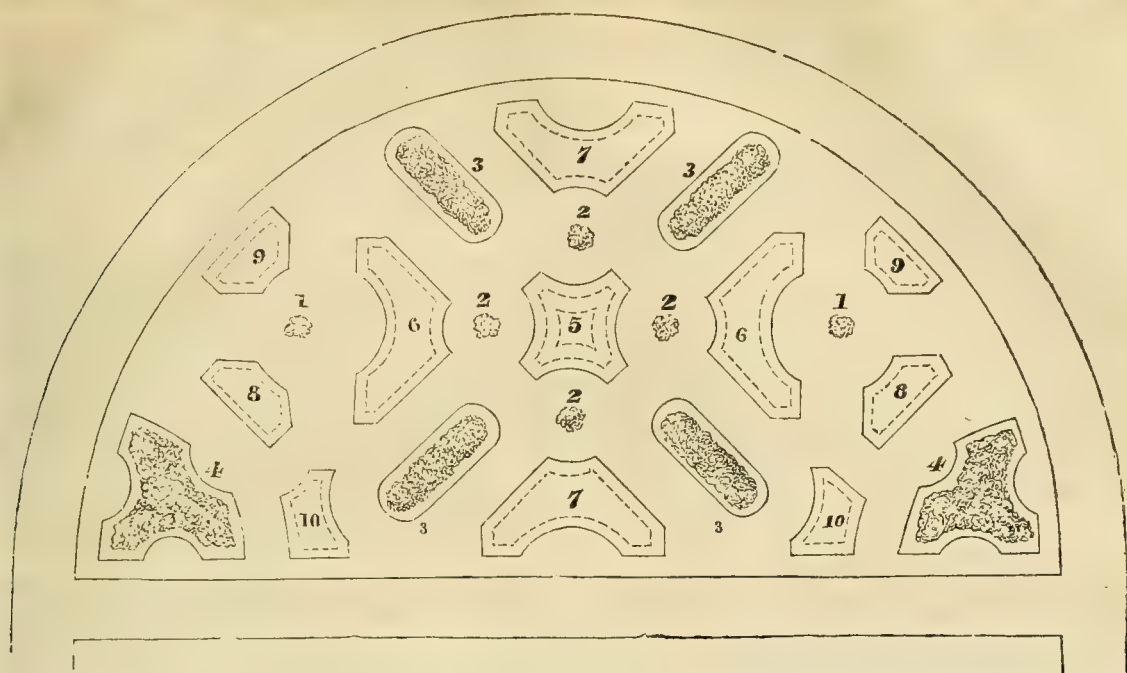
PLAN. NO. 1.



- 1, 1, &c. Specimen half-standard Roses.
- 2, 2, &c. Beds of dwarf hardy Heaths.
- 3, 3. Beds of Rhododendron hirsutum.
4. Perilla nankinensis, edged with Geranium Golden Chain.
- 5, 5. Geranium Madame Vaucher (white), edged with Verbena Firefly (scarlet).
- 6, 6. Geranium Princess of Prussia (scarlet), edged with Verbena Reine Blanche or Snowflake.

- 7, 7. Petunia Géant des Batailles (purple), edged with Lantana Doris (yellow).
- 8, 8. Calceolaria Aurea floribunda, edged with Verbena Purple King.
- 9, 9. Verbena Fair Maid (mauve), edged with Calceolaria Gem (bronze).
- 10, 10. Lobelia racemosa or erinus grandiflora (blue), edged with Lantana crocea superba (orange).

PLAN NO. 2.



- 1, 1. Specimen *Yucca recurva*.
- 2, 2, &c. Specimen *Andromeda floribunda*.
- 3, 3, &c. Beds of dwarf hardy Heaths.
- 4, 4. Beds of scarlet and white hybrid *Rhododendrons*.
5. Centre of bed *Perilla nankinensis*, second row *Geranium Vivid* (scarlet), outer row *Verbena Mrs. Holford* (white).
- 6, 6. *Verbena Lord Raglan* (scarlet), edged with *Peunia Alba Magna*.

- 7, 7. *Verbena Violacea Superba*, edged with *Calceolaria Yellow Dwarf*.
- 8, 8. *Geranium Golden Chain*, edged with *Heliotrope Etoile de Mar-seilles* or *Napoléon III*.
- 9, 9. *Geranium Bridal Wreath*, edged with *Heliotrope Souvenir d'un Ami*.
- 10, 10. *Stachys lanata* or *Gnaphalium lanatum*, edged with *Geranium Countess* (orange salmon).

KEENS' SEEDLING STRAWBERRY NOT BLOSSOMING.

IN looking over such of my Strawberry-beds as consist of runners of last year's growth, I observe a very marked difference in the percentage of truss-bearing plants. Of Keens' Seedling, not one in a hundred shows sign of a blossom, whilst of Princess Frederick William scarce one per cent. of the plants are barren. Between these two my other sorts range irregularly, but none of them are nearly so profitless as Keens', which is, however, a most abundant bloomer with me in the second year.

All the runners were strong and well rooted, and were planted in their new beds within less than five minutes from the time of their removal. Should I have better success with Keens' as a fruit-bearer during the first year, if I allowed the smaller radicles to dry up before being planted? or would it, perhaps, be preferable to apply root-pruning, and cut off, say, one-third of the roots with the view of forcing the formation of fruit-buds by checking the growth of the plant?

Princess Frederick William and some other sorts are quite a success with me treated as annuals, or rather as biennials, planted of course very thickly.

Liebig's new work on the "Natural Laws of Husbandry," throws some very interesting light upon Clover and other agricultural plants bearing some analogy to the Strawberry in their biennial or perennial character. When reviewing the work, your readers will gladly hear something as to the carrying-out of his theory in gardening practice.—FRUIT-EATER.

[It is difficult to account for the absence of blossom on the popular variety mentioned above, as usually it is the best of all kinds as a general cropper; and if it was treated the same as the other kinds which are flowering well, we can only account for it on the supposition that the runners must have been either extra strong, and, consequently, expended their strength in producing sub-runners, or if very weak and late in planting they had not time to perfect their crowns so as to insure a good bloom in embryo. It is seldom, indeed, that healthy vigour impairs fruitfulness in an herbaceous plant like

the Strawberry, although it often enough does so in a shrub or tree.

We cannot see any particular advantage in cutting the roots; on the contrary, it may do harm. It might be better to layer the runners into pots another season, and plant them out if you be certain the non-flowering arises from over-luxuriance. At all events we would not advise anything being done to check the growth, as with that the formation of healthy flower-buds keeps going on. It is also possible, although it is unlikely, that the situation is not favourable to Keens' Seedling. In many places it is almost impossible to make the British Queen grow, let alone succeed well. Is your bed of Keens' Seedling shaded by trees or buildings, or in any other way less favoured by the character of the ground than the other kinds are? We can hardly suppose the variety to be in any way deteriorated by its long cultivation (some thirty or forty years). In most places it is still the most popular kind grown, and it generally succeeds well.

Your beds of Keens' flowering so abundantly this second year is a proof that the situation suits them, and it also confirms the fact, that extreme luxuriance tends to fruitfulness, as we will readily expect the plants to have been vigorous the season there was no fruit on them. Planting a few runners another season on poorer ground will show if a more retarded growth tends more to fruitfulness; but in many places it is difficult to get them to make growth enough, and even then their blooming is anything but satisfactory?—EDS. J. OF H.]

THE CROPS IN CORNWALL.—All the crops, whether fruit or vegetable, give promise of a very abundant season. The Apple trees are covered with blossom. Peaches are to be seen as large as marbles. Cherries, Plums, Nectarines, &c., all well set. Gooseberries are thick and early, and are selling at half-a-crown per quart. Wheat and other grain look very fine. 276 baskets of Potatoes have this week been sent to London from

Penzance. Onions are in a very flourishing condition. Peas are in blossom; indeed, market-gardeners generally say that if the weather continue fine, there will be as good a season as there has been for many years past.—W. P. JUN.

BARBADOES POTATO.

THERE is a kind of Potato in this part of the country which may, perhaps, be the Barbadoes Potato, which your correspondent "CONSTANT READER" inquires about. It was brought over from California this time last year by a neighbouring farmer, and gave a large return.

The tubers are of two kinds, one red the other white. The largest specimens I saw were about 8 inches long and about 2 broad. The shape round, not flat. The skin is smooth, but the whole tuber is covered over with knobs. It very much resembles a kind of Potato I have seen in the south of France, but vastly exceeds this latter in size. The man who brought it over desired me to plant the sets 2 feet apart, said that it grew very tall and branching, and had very striking blossoms of four different colours; he also represented it as exceedingly prolific. It does not seem to be a very early kind, as all our early kinds are far ahead of it.—Q. Q.

A GOOD BOILER.

As I observe that one of our recognised authorities on gardening matters, Mr. Robson, requests the particulars of a good boiler, it will enable all of us who may be interested in such details (and, perhaps, we are each individually too prone to imagine that whatever succeeds best under our own supervision must be the best of its kind) to arrive at some practical opinion on the point, if Mr. Robson will kindly favour us with his judgment after considering the different plans that may be described. I have made use of most of the different methods of heating, and without saying that my present arrangement is the best, I will describe it and its work, and leave it to Mr. Robson to decide.

The boiler is an upright one by Truss, 2 feet 6 inches high and 1 foot 8 inches in diameter, placed at the end of a lean-to conservatory-house, 27 feet by 10, 11 feet high; 6 feet of the back is wall, the upper 5 feet thin boards with ventilating windows. The main flow and return pipes pass through this house, heating it more than is required, on their way to the upper-terrace house (span, glass all round), which is 12 feet above the level of the boiler. This house is 30 feet long, 10 feet wide, and about 8½ feet high, divided into three—a coach-house, a greenhouse, and stove.

In the stove the pipe heats a propagating-tank of 7 feet long, and on its return makes a circuit in the Cactus end before joining the main flow. The water then descends to the lower level, and before returning to the boiler heats a large open-air tank covered with slates, 8 feet long by 3 feet 6 inches wide, and about 2 feet deep, which can be used for propagating or growing Camellias under tall hand-glasses.

The fire, if attended to properly at half-past ten at night, is still alight at six A.M., and the water in pipes and tanks quite hot. All last summer we only used the cinders and breeze of the house; but in the winter months I have used coke as well—about 1½ chaldron per month. In the lower house the ventilators have been necessarily kept open almost always day and night during the past mild season, or the temperature would have been too high.

The boiler is not a patent, though the pipes are those of Truss & Co., of Gracechurch Street, advertised in your columns; but it is an honest and deserving patent, enabling any gardener or amateur to take out and replace any length of pipe that may be defective, and with the advantage that the whole apparatus may be removed at a moment's notice.

Should Mr. Robson come into my neighbourhood it would afford me much pleasure to show him the whole of my limited arrangements, and to thank him personally for the many hours' gratification and knowledge that I have gained by perusing his articles.

Before sending this off I inquired of my gardener, who, although not a scientific man, has had many years' experience, and he says that our present mode of heating consumes less fuel, and gives less trouble than any of the various modes that he has had under his care; and that if carefully fired and made up at night it will

be alight after eleven or eleven and a half hours.—C. M. MAJOR, *Cromwell House, Duppas Hill Terrace, Croydon.*

[We have read over the statement. There is little doubt of the heating in the circumstances; but the conditions required by Mr. Robson are not given—expense of heating, material, and consumption of fuel for the space to be heated. The only singular thing, and a most capital idea it is, is bringing the return-pipe through a cistern of water out of doors, so as easily to get heated pure water.—EDS. J. OF H.]

CHEAP FLUES.

At page 211 of THE JOURNAL OF HORTICULTURE your correspondent "E." represents that he heated two houses, each 20 feet long and 15 feet wide, by means of a smoke flue at a cost of 50s. A gentleman who saw this statement, and who is erecting a vinery 90 feet long, came to consult me as to the practicability of his heating it at the same rate of cost. I at once told him that I had no idea how it could be done; that all flues I had ever seen had a furnace front and cast-iron bars, and generally a damper, and that flues required foundations—arches, in fact, if in a vinery, for the arrangements for the roots of the Vines to be what they ought to be—and that 50s. would go a very short way in providing the above. That portion of the article appeared very much like an advertisement to the effect "there is nothing like bricks," "E." being a vendor of that very useful commodity.

The matter has, however, now assumed a different aspect when your highly intelligent correspondent, Mr. J. Robson, accepts and puts forth "E.'s" statement with his signature across it; and to prevent misunderstandings with those who have such works in progress I consider that either "E." or Mr. J. Robson should give the full particulars, with the cost of the various items; for I am convinced something has been forgotten in the estimate.

For Mr. J. Robson's information let me say that I took an estimate from a bricklayer for a flue to heat a vinery 110 feet long. The flue was to be along the whole length, and both ends of the house and on arches, so that the Vine roots could run under it. The cost of the place was to be £19 10s., and for that sum I erected a hot-water apparatus, boiler, and everything complete. There are only two rows of pipes along the front and one end. The house is a late vinery, and that extent of pipe is found ample. The apparatus has been up six years, and has not cost sixpence since its erection; whereas the least that could be allowed for cleaning-out the flue would be 5s. annually.—WM. THOMSON.

ENTOMOLOGICAL SOCIETY'S MEETING.

The April Meeting of the Entomological Society was held on the 5th inst., the President, F. Smith, Esq., being in the chair. Valuable donations to the library received from the Royal and Linnæan Societies, the Society of Arts, the Royal Agricultural Society, Dr. Schaum, and Messrs. Saunders, Hewitson, &c., were announced; and Professor Lacordaire, of Liege; Dr. Hagen, of Königsberg; and Dr. Leconte, of New York, were elected honorary members of the Society.

General Sir J. B. Hearsey exhibited a box of handsome Lepidopterous insects belonging to the family Noctuidæ, from India, including several new species.

Mr. G. R. Waterhouse exhibited a new British species of Staphylinidæ, *Aleochara inconspicua*, remarkable for the great length of the terminal joints of the antennæ.

The President made some observations on the economy of the curious parasitic Beetle, *Claviger testaceus*, which he had found in Ants' nests in some numbers near Croydon, and which he had kept alive by offering them sugar dissolved in water upon blotting paper, which they had readily sucked. Specimens had also been found in the nest of the common garden Ant at Folkestone. It was generally in Ants' nests concealed beneath flat stones that these little Beetles were to be found.

Mr. J. Lubbock made some inquiries relative to the two species of Moths, *Acronycta Psi* and *tridens*, which although so similar in the perfect state as to be scarcely distinguishable, are produced from larvæ very different from each other.

Mr. Lowndes read some notes on the habits of different species of Ants collected by him in Australia. One species he had observed ranged over an area of at least a thousand miles with-

out any variation (a fact of some importance in reference to the geographical modification of species). He had also observed that when its nest was built under stones of a black colour the stone was left uncovered, but if the stone were white or light coloured, it was covered with charcoal or other dark material, the object of which, as suggested by the President, being the increase of temperature arising from the dark colour. The species of the genus *Polytracha* make their nests of leaves, the margins of which are glued together by the insects; but one species forms burrows in the stumps of the *Eucalyptus*, which is so hard and heavy that it sinks in water. The species of *Myrmecia* are of large size and very formidable for their stings, the poison of which is, however, of a very transitory kind. Their larvæ when full grown form a cocoon which is by no means a common character in the *Myrmecides*, to which division of the family the genus belongs. One of the species, *M. nigro-cincta*, is able to leap to a distance of 2 or 3 feet, although the legs are not apparently dilated or formed otherwise than for running.

A letter was read from Mr. C. A. Wilson, of Adelaide, giving an account of a recent exploration across the interior of Australia, with notices of some of the insects observed. In the splendid family of Beetles, *Buprestidae*, not fewer than 150 species had been collected by Mr. F. G. Waterhouse.

Mr. W. C. Hewitson read descriptions of two new beautiful exotic species of Butterflies, from Bogota, one named *Morpho Alexandra*, in honour of the Princess of Wales; and the other *Papilio Burchalii*.

Mr. Rowland Trimen sent descriptions of three new species of Butterflies captured in the neighbourhood of the Cape of Good Hope, specimens of which had been forwarded to the Society in a post letter.

Herr Vollenhoven, of Leyden, also forwarded a notice of the great work on which the Dutch Government is at present engaged, containing an account of the zoological productions of the Dutch settlements in the Eastern Archipelago, the first entomological part of which is nearly ready for publication.

THE TOAD,

DOES IT HABITUALLY CONSUME WORMS?

TOWARDS the close of one of those wet misty days usual in the autumn, my attention was drawn last year to one of my noble friends, a toad, seemingly in a stooping position, or with his head down. As I had never seen him in such a position before, I watched his movements. On perceiving me he resumed his erect position, and I then saw protruding from one side of his mouth part of a worm, in size evidently above the medium; the so-called head of the worm being within his mouth, whilst the opposite extremity struggled hard to release itself from the firmly-closed mouth of its captor.

I stood quiet, determined, if possible, to watch the issue; but my patience exhausted, I moved to go, when the toad moved forward also, and at the same moment swallowed the worm. It seems to be probable, that the toad habitually does consume worms. This idea is strengthened when we take into consideration the amount and frequency of its excrement generally, which certainly is decidedly opposed to the idea that the more minute insects which it is known to catch during the day, are its only sustenance.—W. EARLEY, *Digswell*.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE recent heavy rain will render the operation of continual surface-stirring necessary; a light thin-tined fork to be used, as it enters deeper into the soil and makes more effectual work than any other implement. Small crane-necked hoes are useful for stirring the soil amongst seedling crops. By all means avoid treading on the soil after the operation is performed, especially if the soil is at all wet. Continue to trench up all ground remaining or becoming vacant. *Asparagus*, the beds are now coming into full bearing. The practice of allowing the shoots to grow longer out of the ground before cutting is becoming more generally adopted even by the market-gardeners, and ought to be universal: an inch or an inch and a half below the surface is quite enough. Do not permit any to run up at present, not even weak ones, and give the beds occasionally a good supply of manure water with a little salt dissolved in it. *Basil*, as also *Capsicums* and *Chilies*, should now be undergoing the process

of hardening previous to planting out. A portion of them to be retained in heat for an early supply. *Beans*, make another sowing of Longpod, or Green Windsor, or any other approved sort. Earth-up the early crops, but if the weather is dry give them a good watering previous to doing so. *Broccoli*, the seed-beds to be frequently sprinkled with soot, wood-ashes, or dust of some kind, to protect the young plants from the attacks of that is commonly called the fly. The young seedlings sometimes disappear without any apparent cause; but if they were looked over about ten o'clock at night with a lighted candle, the cause would appear in the shape of slugs. Two or three doses of quicklime sprinkled over them will prove effectual for their destruction. *Carrots*, if the main crop has failed, sow seed of the Early Horn immediately. *Cabbages*, continue to plant them out from the nursery-beds, and also the Cauliflowers as they become large enough, and keep the earth well stirred about those advancing. Cauliflowers and Cape Broccoli may still be sown for a late supply, but there must be no delay. *Parsley*, thin the early sowing as soon as it is up. *Peas*, earth-up and stick the advancing crops, but before doing so they should be watered if the soil is dry. Make another sowing. *Potatoes*, hoe and stir the soil between the rows of the early out-door crops. *Radishes*, sow every ten days, and Lettuces every three weeks, and Mustard and Cress every four or five days; all in quantities proportioned to the demand. A few of the earliest Radishes to be left to seed, the pods for pickling. *Scarlet Runners*, make a sowing in the open ground to succeed those that may have been forwarded in boxes, and which will be ready to plant out the latter end of the week. *Turnips*, thin the advancing crops, and make another sowing of Stone to come on in July and August. *Vegetable Marrows*, towards the end of the week have a ridge prepared for turning them out on, and also Cucumbers under hand-glasses. There is no better way than the usual one of throwing out a trench 3½ or 4 feet wide filling it up with fermenting matter and returning the soil, but if the soil is not of a light nature, it is advisable to get some light prepared compost laid where the glasses are placed. Where any main crops have failed no time should be lost in putting in more seed.

FLOWER GARDEN.

The late rains will be favourable for recently-planted shrubs, and now the soil is damp no time should be lost in completing whatever in the shape of planting remains on hand. The herbaceous ground to be well cleaned and neatly raked over; this cannot well be done sooner, in consequence of many species being late in vegetating.—See that standard Roses are secured against high winds. Those which were budded last season to be again gone over, and all the buds and suckers which proceed from the stock to be removed; the inserted buds which have made shoots to be stopped back to three joints, which will cause them to take a firmer hold of the stock, and will increase the size of the head. From those which are intended for budding upon this season, rub-off all the buds with the exception of three well-placed ones at the top of the stock. As the state of the soil and weather is now favourable for commencing with the bedding-out stock, a start to be made with the *Calceolarias*, *Verbenas*, and similar plants, reserving *Heliotropes*, *Ageratums*, and the more tender kinds of *Geraniums* for the latest planting when the danger from frost of any severity may be supposed to be over. Branches of evergreens are easily obtained about most places, and a sprinkling of these stuck into the beds after planting will be of great service in protecting the plants from the drying effect of bright sunshine, and will also help to ward off frost.

FRUIT GARDEN.

Moderate disbudding, or, rather, thinning, the shoots to be persevered in, but they must now be removed with a sharp knife, and not broken off, as the shoots are acquiring consistency. Some of the strongest shoots of Peaches intended to remain will require to be tacked-in. Stop the strongest shoots of Vines a joint beyond the fruit, and commence nailing-in. Apricots being generally used for tarts to be left until they are large enough for that purpose. Pay attention to the destruction of insects on fruit trees, in order to afford the young shoots a fair chance to make healthy growth. See that recently-transplanted trees are not allowed to suffer through want of water. Look after the caterpillar on the Gooseberry trees.

GREENHOUSE AND CONSERVATORY.

Where a large quantity of hardy shrubs is annually forced, either to decorate the drawing-room or conservatory, it is not desirable to pot a fresh stock each season, for a number of the

deciduous shrubs—as Roses, Lilacs, Honeysuckles, &c.—may by proper treatment be made to bloom for several successive seasons: select, therefore, the most suitable plants when removed from the houses, and give them some kind of temporary shelter to gradually harden their foliage. Those cramped for pot-room to be shifted into pots a size larger in rich turfy loam; towards the end of the month plunge them in an open situation that the wood may ripen early; those plants, from having been previously forced, will bloom earlier than the new stock, of which a portion each year should be potted to replace such as become useless for further work. As soon as cold frames and pits are clear of bedding stuff they should be occupied with young stock of hardwooded plants, for the summer growth of which they are better adapted than large houses. Fuchsias for late blooming must not be kept too warm, they should be placed in a moist shady house where they will grow much more freely than in a high temperature. Conservatory-beds will require water, as also all large plants in tubs—Camellias, particularly, being in active growth will require a liberal supply; a watering of manure water will be advantageous. Cut down and place in a cold frame the choicest Cinerarias for suckers, and put in a stock of Chrysanthemum cuttings for autumn display. The different Ipomæas and Thunbergias being subject to red spider should be well syringed, to prevent the pest gaining ground. Have an eye to the propagation in due time of stock for succession or winter flowering. Take care to secure cuttings of such plants as Clerodendrons, Poinsettias, Eranthemums, Erythrinas, and of those useful winter-blooming plants Euphorbia jacquiniæflora and Gesnera bulbosa.

W. KRANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

STILL cold winds, a low barometer, and only threatening rains, which now, in moderation, are much wanted. Run the Dutch hoe among all advancing crops, to cut-up young weeds and prevent cracking—such as among Cauliflowers, Cabbages, Potatoes, Onions, &c. A little hail and snow and a low barometer are signs that we shall get some rain ere long. Expecting it to come, have had all our watercourses cleared that we may preserve what we can for watering purposes, as water is scarce with us. Gave Cauliflowers a little manure water, to cause the heads to come strong and dwarf. We had set our hearts on having a tank made with divisions for different kinds of manure water, near to a large tank that takes the water from the roofs of certain glass houses and sheds, but we did not succeed in our aim, and did no better as to securing some large old casks; those we have used for the purpose being old oil-casks, and in use for the best part of twenty years, but now so worn-out as to be unable to hold water.

Well, as we could not have what we wanted, we made shift with what we could obtain; for to be destitute of clear lime and soot water, and manure water well fermented, appeared to us to be almost as great an inconvenience as for a fish to attempt to get comfortably along with a scarcity of pure water. Two modes presented themselves involving only a little labour, and little but the expense of the labour. The first was to make a large trench or pond with sloping sides, and cover the bottom and sides with stiff puddled clay and tar, and some rough gravel beat into the sides of the clay. This would have taken more time than we could spare, and it would have required us to have waited until the tar dried, or the water might have had too much of it. The second mode was to sink the old ricketty barrels, that had seen such long service, in the ground, and make them waterproof there; and that was the plan resorted to.

A deep trench was dug, deep enough for the top of the barrels to be level with the surface, and wide enough to leave at least 9 inches all round them. The surface soil was removed, but the clay below was saved for repacking round the barrels. Each barrel in turn was handled as carefully as possible to prevent it falling to pieces. The bottom was then thickly painted with tar outside. The place where it was to stand was prepared with soft clay mixed with tar, so that when set up there was no chance of water getting out by the bottom. We would have tarred the inside, only we could not afford to wait for the tar drying. The outside of the barrel was, however, examined, and all rents, fissures, and deficiencies filled up with stiff clay putty, and then tarred heavily all over; and, as the clay was being rammed firmly against the barrel, at every layer of 4 inches or

so a little tar was trickled round the barrel, so that when the wood of the barrel is more thoroughly rotten and decayed the openings between the sides will still hold water. The surface of the ground round the top of the barrels was of clay well beaten, covered with a thin layer of tar, and then with a layer of sand, which will become hard and firm. The whole looks so nice, and the barrels are so much more easily filled and emptied, that we are surprised we did not think them years ago. The only disadvantage is that we must place hurdles round them to prevent four-footed or two-legged animals falling into them, if they should go in a dark night where they have no business.

Whilst on this subject we may hint that those who use liquid manure made from sheep, deer, cow, or horse droppings would act safely in pouring boiling water over them, and covering them up with a lid some hours before filling up with common water. The boiling water will scarcely leave anything alive in the droppings.

General routine with Cucumbers, Dwarf Kidney Beans, Peas, &c., much the same as last week. Moved Tom Thumb Peas in orchard-house that had done good service to the foot of a wall, where they will come as often and as quick as wanted. Although Peas are Peas we never think that those gathered under glass, however open, and cool, and airy, are quite so good as those obtained in the open air. Put small stakes to those planted out in front of orchard-house now in full bloom. Watered Dwarf Kidney Beans behind them to cause them to come regularly. Those in boxes will need planting-out soon.

FRUIT GARDEN.

Planted-out Strawberry plants that had been forced and the crop gathered; removed breastwood partially from Peaches, Apricots, and also Pear trees; kept houses at much the same temperature as previously stated; thinned shoots and stopped shoots on fruit trees in houses; drew a hand quite dry on sunny days over bunches of Muscat Vines in bloom; watered Figs, and planted-out more Melons as room could be had for them.

PLANT DEPARTMENT.

Shifted Geraniums, a few Ferns, Fuchsias, &c.; moved more Cinerarias and Primulas from conservatory, and replaced with Fuchsias and Pelargoniums; potted Fancy Geraniums for beds; made cuttings of, and divided Dahlia roots; planted a number in a slight hotbed, giving them about 3 inches square, and leaving only one stem to each; potted Gloxinias, Begonias, especially fine-foliaged ones, also Browallias, Balsams, and pricked-off numbers of Lobelias, and other small things. Turned out in Celery-trenches great quantities of fresh-struck Verbenas, Geraniums, &c., putting them in sandy leaf mould and hardly breaking the balls, for reasons previously given; watered Calceolarias and Geraniums formerly turned out, as the weather has been so dry and parching.

FLOWER GARDEN.

Rolled, mowed, cut up Daisies with a long-handled double-bladed daisy-knife, worth a dozen of daisy-rakes. Dug down beds in flower garden; and as in some parterres that we wish to be level, the ground had got considerably above the grass, took a lot away, to secure the level character, and used it to dress borders which are rather low, or to raise beds which we wish to be in the pyramidal form. Calceolarias are now mostly exposed night and day in their earth temporary beds.—R. F.

TRADE CATALOGUES RECEIVED.

F. & A. Smith, Dulwich.—*Retail Catalogue of New and Rare Plants.*

Blondeau-Dejussieu & Co., Beaune (Côte d'Or).—*Notice sur des Arbres, Arbrisseaux, Arbustes, &c., précieux ou nouveaux.*

Henry May, Hope Nurseries, Bedale, Yorkshire.—*Spring Catalogue of Dahlias, Pelargoniums, Fuchsias, &c.*

Fairhead & Son, 7, Borough Market, London.—*Catalogue of Dahlias for 1863.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

SEEDLING PETUNIA AND VERBENA (Inquirer).—Send them to the Floral Committee of the Royal Horticultural Society, Kensington Gore, directed to the Secretary, T. Moore, Esq. The next meeting of that Committee is on the 5th of May.

SEEDLING GERANIUM (Hortus).—Too much depends upon the habit of the plant for us to give an opinion upon it as a bedder. In colour it is like Christine. Cannot you induce your near neighbour, the Rev. H. Dombrain, of Deal, to look at it?

VERBENAS, PLANTING OUT FROM CUTTING-PAN (W. P.).—You may plant them out of the cutting-pot with perfect safety at the proper time and in moist weather; but they will be later than those which have been potted-off and established some time in small pots. When, however, space is scarce it is often necessary to plant direct out of cutting-pots.

AZALEA INDICA—CUTTING DOWN OLD PLANTS (W. P., Camborne).—If your plants are old and unsightly naked, it would be better to plant them out of doors in some favoured spot and procure some young ones, as they rarely do well by cutting down; whereas by planting-out they may possibly make good useful shrubs in a few years.

CINERARIA, CUTTING DOWN AND SOWING SEED (W. P., Camborne).—If Cinerarias be allowed to ripen their seed, many of the plants will die afterwards. Thus it is better to cut down the plant before the flower be entirely faded, and by the appearance of the collar of the plant you will see if there be any suckers rising; if not, the plant will likely die. It is, therefore, better to sow a quantity each year, and the earlier in May the better. Sow in a pan of sandy soil made somewhat firm, and place it in a shady situation; prick the plants out when they are large enough to handle, and pot when required.

SEEDLINGS (M. Errington).—Your seedling Cinerarias and Tropæolum, though good flowers, are not sufficiently novel and distinct from other varieties in cultivation.

MELON-LEAVES SPOTTING (An Early Melon-grower).—Are you sure the leaves are affected by disease, and not by scalding, by having a powerful sun shining on moist foliage, and air not given early enough?

ARRANGEMENT OF STAGES IN GREENHOUSE (A., Glasgow).—We would certainly narrow the front stage to 2 feet, and make the back one $4\frac{1}{2}$ feet. You could have that flat, or raised in a series of four or five steps to the back wall. If the floor is paved, large pots would be best for the climbers, otherwise you might have a border at back for the purpose.

HEATING A PIT FOR BEDDING PLANTS (W. Cobb).—The best would be hot water and pipes. The cheapest to be effectual would be a brick Arnott's stove lighted from the outside, placed in the middle of the pit near the back. It is a pity you cannot make the pit a foot or two wider.

CAMELLIAS NOT FLOWERING (H. Y. G.).—Your Camellias, we presume, are all right. Continue the same process, and give more light and air in July and August. You do not expect them to bloom now, surely. November and January would be early enough.

FLOWER-GARDEN PLANS (A Novice, Yorkshire).—Both borders will look well.

MOLES IN VINE-BORDER—CISSUS DISCOLOR LOSING ITS LEAVES (Constant Reader).—We should not like moles in our Vine-border—they would be apt to cut the roots that came in their way. If the top of the Cissus is alive, it will break in heat and moisture. Syringe it well, and do not water heavily until it break. If the top is dead and the bottom alive prune it back, and give but little water until it break. Then shake away part of the old earth, repot, and give bottom heat if possible.

FUNGUS ON PEAR-LEAVES (D., Newcastle).—There is a fungus on the leaves, the result of imperfect root-action, and we think, rather much moisture or deficient drainage. Stir the surface soil to let the air into the soil, and water only as wanted.

AMARANTHUS MELANCHOLICUS—ZELINDA DAHLIA (Q. Q.).—The *Amaranthus melancholicus* is not so hardy as Orach, nor does it break so well. It will bear nipping if the season is warm, and will mix well with Bijou if it grow freely enough; but we did not get on well with it. Ours needed no pegging-down. We think it needs a warm place and a hot season, but we would wish to know the general result last year of those who tried it. We would not stop Dahlia Zelinda. You cannot get the flowers too early. If at all much taller than you want, plant sloping, or peg the plants down. The leaves were much injured; but the one with the most yellow we should say was Golden Chain and the other Golden Fleece, but cannot be sure.

CINERARIA MARITIMA TREATMENT—BEDDING PLANTS (S., Hampton Court).—For the *Cineraria maritima* seedlings, nip the points out by all means. You can do nothing to increase the silvery appearance, except, perhaps, by growing them in poor soil. They will be more silvery as they get older towards autumn. Then we would advise you to keep the best plants over the winter, and propagate from them by cuttings instead of by sowing seeds. Seedlings will not compare with plants so raised, though they will look very well if you have none of those raised from cuttings of the old plants near them. The Sultan Calceolaria is a better pot than bedding plant. In a bed, for a month or six weeks it will be everything that you could wish; but in most cases, unless great care and attention are given, it will be patchy afterwards. Your edging with Flower of the Day Geranium, and bounding with *Lobelia speciosa*, will do well. Were we to depend on Sultan we would plant thickly, say 7 or 8 inches apart, and when the plants were growing freely we would cut over every other one so as to obtain a succession of bloom. It is doubtful what the beginning of May may bring with it. Instead of planting out at once we would plunge the pots, or rather turn them out, without breaking the balls, into a sunk bed anywhere where you could give them a little shelter if necessary. If you can do that in the beds you may plant at once; but having things thick together enables protection and watering to be easily given. See "Doings of Last Week."

SEEDLING POLYANTHUS (W. W.).—Not knowing the habit of the plant, or whether it is an abundant bloomer, we cannot give a decided opinion on its worth as a bedder. Polyanthuses generally are not good for the purpose, and such a combination of yellow and crimson renders it still less decided in tint for bedding.

BOTTLING GOOSEBERRIES (A. W. A.).—Gather the fruit dry and when little more than half grown; pick clean, put into wide-mouthed bottles, and shake gently down till the bottles are full. Cork these tightly, put them in a moderate oven, and let them remain till heated through. Beat in the corks tightly, cut off the tops, resin them over, and keep in a dry cool place. Wood-ashes form an excellent manure. For the best mode of using them consult "Manures for the Many," which will shortly be published at our office.

HARDY ANNUALS (T. G.).—You may sow in pans, and keep close, warm and dark until the seedlings appear, and then give light and air by degrees. We would sow some in this way, and sow the rest in the open air, as the ground is now getting warm. In sowing *Portulacas* and *Mesembryanthemums*, it is best to water the pot, let it dry a little on the surface. Sow the seeds, then sprinkle with sand or fine soil, press down, put a square of glass and a piece of paper over the pot, or the paper alone, and allow the paper to remain until the seedlings appear. So managed, they will generally come up without watering. If you have occasion to water before or afterwards, soil the pot instead of watering overhead. The easiest way to do this is to hold the pot in a pail of water, allowing the water to rise from below to the surface. Zinnias require an ordinary amount of water. To do well they must have no stoppages in their growth. For more particulars we refer you, "C. W. H.," "G. T.," "N. O.," "X. Z.," and others to an article to-day on Annuals.

SCIENCE OF WINDOW-GARDENING (A Subscriber, Swansea).—Mr. Bosanquet's work is published at our office, price 6d., or free by post 7d.

SEA-KALE.—Would our correspondent "T. W. B.," whose communication appeared in No. 106, oblige "W. M." by stating in what month he covered his Sea-kale with seaweed, and the date of his first gathering?

KALMIA LATIFOLIA BUDS NOT OPENING (Constant Reader, Dublin).—This may be owing to the check caused by your plants being taken up and planted in a balcony; or perhaps their roots were very much reduced to get them into pots. This, we know, will occasion the flower-buds to refuse to open, and manure water will not repair the injury done. The buds of *Rhododendrons* open more easily, as it would appear that the effort required on the part of the plant to expand them is much less than that necessary in the case of the *Kalmia*, and unless the plant be in health it is unable to do so. When growing in the open ground, it sometimes does not open its flowers as you describe.

VERBENA CUTTINGS FAILING (Constant Reader, Dublin).—We cannot well account for your cuttings damping-off, after being in about three weeks, in March and April. They are often ready to pot-off in that time, and the sooner that is done the better after they are sufficiently rooted. If they are very much drawn, and then suddenly exposed to cold chilly blasts, they will succumb; but, generally speaking, nothing does better than Verbenas in spring. Write us more particulars, and we will give you more advice.

WELLINGTONIA TURNING BROWN (Ada).—If your Wellingtonia exhibits greater brownness than it has done during former winters, and if there are evident signs of weakness in its growth, treat it as you say with fresh loam and leaf mould.

NAMES OF PLANTS (A. Fyde Fulmer, Slough).—*Helleborus viridis*. (W. O.).—1, *Helleborus foetidus*; 2, some *Canna*; 3, *Boronia polygalifolia*; 4, *Dolichos speciosus*. (F. G. S.).—You must send better specimens. 1, *Ajuga reptans*; 2, *Luzula pilosa*. The rest nothing but leaves. (F. J.).—*Eutaxia myrtifolia*, and apparently *Dacrydium excelsum*. (Flora).—Apparently one of the *Holboellias*, but the specimen was insufficient to determine which. Perhaps *H. acuminata*. (A Reader, Dumbartonshire). 1, *Chelanthus pteroides* apparently, but there is no fructification; 2, some *Marchantia*. (A. B. C.).—1, *Myrsine pimenta*, or something very near it; 2, *Rhynchospermum jasminoides*; 3, *Polygala myrtifolia*; 4, *Aphellexis*, without foliage; 5, *Hovea Celsi*; 6, *Eriostemon scaber*. (J. G. Tierbutt).—The leaves are those of *Myoporum acuminatum*. The *Fuchsia* is not equal to many others in cultivation.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

COMING POULTRY SHOWS.

THOSE who have bred good and early chickens this year, and we believe they are many, are beginning to view them with reference to their capabilities as exhibition birds. A may be convinced he has better birds than B; but it is satisfactory to have his judgment strengthened or endorsed by the awards of acknowledged judges, and he likes to see them fairly pitted against all comers.

All do not care to enter for the blue ribands at Birmingham and the Crystal Palace. They rather seek shows of less pretension and shorter duration. We would say to such there is an agricultural Show at Basingstoke at the latter end of May. It is held in connection with the Show of the Hampshire Agricultural Society. Full particulars can be had of Mr. Downes, Secretary, Basingstoke. It is near London, and the birds are only two days absent from home.

Then we have the Agricultural Hall Show at Islington, and the Bath and West of England in June. The latter is always a pleasant Show. It is held in summer in a lovely part of the country, and is a general holiday. Temporary avenues of trees are planted in the streets; flowers and evergreens stretch from window to window; all the bands of music in the country are

put in requisition; guns and even cannon are discharged, and the Show is a fête.

There is one thing we do not understand:—there is to be open judging on Saturday 6th. What is open judging? Are the awards to be made in presence of the public? if so, we do not envy the Judges, nor do we think they can do justice to exhibitors. Nothing requires privacy so much as judging, and where competition is close it is absolutely necessary.

MALAY FOWLS.

I HAD no expectation when I sent you my first letter on the "Characteristics of Malay Fowls" that it would have induced so much correspondence.

In the first place, I thank you for inserting my letter and for your observations thereon; in the next for observations made by correspondents on this interesting subject. We have now, I think, pretty clearly elicited what points we should aim at in breeding Malays; and it may be expected that in a few years perfection will be arrived at in this breed of poultry.

Your correspondent "Y. B. A. Z." is pleased to designate my fowls as "too handsome." They were considered by many persons living here as much finer and more beautiful than those to which the first prize was awarded; but, like myself, these friends of mine knew but little of what constituted a good Malay; we were all mistaken. This circumstance may probably illustrate some of the disputes which occasionally arise between exhibitors and judges; the former thinking their fowls ought to have had a prize, when, in fact, they were, like me, not aware what were the essentials to constitute a good fowl.

I am free to confess that if I had been appointed to judge birds like those exhibited at Devizes, without, of course, knowing who were the exhibitors, I should have given the prize to my own pens; and I am now, after this correspondence, quite convinced I should have done wrong.

I have never disputed the decision of any judge; I consider it would be a reflection, not only on the Judge in question, but also on the Committee who appointed him. All committees, I believe, do their best to secure persons to act in this capacity who are esteemed competent and whose integrity is unquestionable: under these circumstances, therefore, exhibitors would do well to forego their feelings if they should consider that justice had not been done to them, remembering that we are all fallible creatures, and the best of us may possibly err sometimes.—JOHN JAMES FOX, Devizes.

RULES FOR POULTRY-JUDGING.

Are the new rules for judging to be adopted at the Show at Islington? If they are, where can I procure them? Will you exert your influence in this matter? I and others are now breeding and selecting for exhibition in the autumn and winter. The Poultry Club is tolerably certain of carrying its point and having a voice at most shows. As there will be no getting away from the *litera scripta*, we ought now to know what we are to try for; otherwise the efforts of the Club will end in placing us in the position whence they say they wish to extricate themselves—viz, that of exhibitors who know not what to exhibit. I think if the rules are not ready for publication now, their application to shows should be deferred till next year. What causes the delay?—ONE IN THE DARK.

A PRAYER FOR BIRDS OF PREY.

THE destruction of birds of prey has been of late years so indiscriminate and so universal, owing to the very strict preservation of game, that many are extinct where they formerly abounded; and I venture to invite the attention of your readers to a list of birds formerly not rare, but which now do not exist in this district, some of which might, if a merciful consideration were extended to them, still enliven our country lanes and woods, the toll levied by them being a very unimportant tax on the produce of the races which supply them with food.

The district in which the birds enumerated have been seen is in the west of Essex, extending from Waltham Abbey to Dunmow, including the valley of the Stort. The list has been prepared and given to me by Mr. Daniel French, of Sawbridgeworth, who has through a long life never failed to give the most acute attention to birds and their habits. I send it to you

precisely as it has been given to me. Cannot the proprietors of woods and coverts be induced to order their keepers to abstain from such unremitting war as they wage on these classes?—T. F. K., Sawbridgeworth.

"BIRDS OF PREY—(FALCONIDE).

"ROYAL EAGLE.—Was shot twenty years ago on Tukely Forest, Essex, and I remember one being shot at Waltham Abbey in the marshes.

"OSPREY OR FISHING EAGLE.—A very fine one once lived two or three years about Latton and Nettleswell. I have sometimes been very near to it. I do not know what became of it at last. One has since been shot at Pishobury, Sawbridgeworth.

"KITE.—Formerly at Great Parndon, used to breed in Parndon woods; they are all destroyed.

"MOOR BUZZARD.—There used to be a tract of boggy ground extending from just below Latton Mill down to Burnt Mill with several woods. I have there seen this rare bird two or three times, but have not known it to continue there.

"COMMON BUZZARD.—This was so frequent that I have seen it alight on the barn where I lived, and it used almost continually to be sailing over the meadows; they bred in Latton and Nettleswell woods, not one now remains.

"GOSHAWK.—Used to breed in Hyde Hall wood, Sawbridgeworth.

"SPARROW HAWK.—This active and interesting bird is now very seldom seen, it used to be frequently so; if the farmers execrate the Sparrows they should preserve this Hawk, as its food consists almost exclusively of Sparrows.

"LANNER.—I once saw this large Hawk in Hyde Hall wood, Sawbridgeworth, and I have seen it both in Harlow and Latton Park woods; but it has always been very rare.

"PEREGRINE FALCON.—This has been shot in Stansted Marsh, Hertfordshire, in Gilston Park ditto, and I have seen it in Epping Forest.

"KESTREL (the Hovering Hawk).—This beautiful and interesting little bird that used to enliven the country by his pretty hovering and his plaintive note, is now almost exterminated by the keepers; it meddles with no sort of game, and no bird is of more use to farmers. Its food consists if not exclusively of mice, very nearly so. It enters barns and other out-buildings when not too public in the same manner as Owls. Wherever a nest used to be found which was generally in the old nest of a Crow or Magpie, it was invariably found to be lined with the skins of mice; but in spite of all its services and its beauty it is gone! destroyed by rascals.

"HOBBY.—This small Hawk was more rare than either of the two last-named, and appeared to prey mostly on the larger insects, as it was generally hawking round trees or darting very rapidly along; it kept secluded in woods.

"MERLIN.—This is the smallest of the native Hawks. I once knew a nest with two young ones to be taken in Ongar Park wood, Essex; I had the care of one of the young ones for some months. One a few years since chased a Sparrow into a greenhouse at Sherring, Essex, and, of course, was killed by the man who caught it.

"This is all the species of the Falcon tribe I have been accustomed to know.—D. FRENCH."

NATURAL HISTORY.—We saw the first Dottrell on Wednesday last. We have seen but one.

SWARM OF BEES IN APRIL.

On the 26th ult. we had a swarm of bees here (Linton), from an old hive which, in company with two others, had never been fed all winter.

As it is unusual for bees to swarm in April, I record this instance as the first that has occurred with me; but I believe, three or four years ago, one of my neighbours had a swarm on the 28th of the month. This season, owing to the bright sunny weather, I have no doubt but there may have been several swarms during the month, especially where the bees have been fed, and the situation a favourable one for their doing well.

Last year was by no means a good honey season, but I attribute my bees doing pretty well to the fact of there being so few bees in the neighbourhood. The wet season of 1860, and subsequent hard winter, were fatal to many stocks which have not yet been replaced: hence there was a wider field for those remaining, and they consequently did better.—J. ROBERTSON.

B. & W.'s APIARY.

(Continued from page 270.)

To keep your apian readers "posted-up" in my proceedings I will now recount the events of the last three weeks in order. The operations recorded at page 269 took place March 21—a venturesome time to compel bees to begin artificial-queen-rearing. The plan sketched out there was pretty closely adhered to—that is to say, on the 30th I "made a swarm of D by driving it into a box well stored with comb and food." 2ndly, "D, when cleared of its adult population, was placed in the room of A, after shifting into D the Italian queen and population of A." 3rdly, "A with its Italian brood was put in place of F, setting F over it after catching and destroying its drone-breeding queen." Thus far on the 30th and 31st. I found a large number of drones in F, hatched and unhatched, which have survived, and are now (April 13th), flying in and out in full vigour. Some of them are well marked, but the greater number differ in no respect from common English drones.

On Saturday, the 4th of April, I took off top F, and expelled the bees, compelling them to return home to the lower box, and a good deal of drone-brood was sacrificed. The bees were very savage, as, indeed, they have been throughout all my operations this spring; nor was there any difference between the temper of the Italian and English bees. The most surprising thing, however, was that the bees of F had made several royal cells amongst the drone-brood, and at least one of them was occupied by a grub floating in royal jelly! Had the bee dragged up an egg or young Italian worker-grub from the hive below, or was this a case of mistaken instinct? Anyhow I thought it fortunate that I had taken off this box in time, as there must still have been Italian brood in the hive below of an age suitable for rearing a queen. But this set me thinking that, perhaps, B was in the same predicament: accordingly the same day, exactly a fortnight after the queen of this stock had been destroyed and brood given to them, I examined B, and found the Italian brood-comb with most of its bees hatched, but no royal cell in it. There was one, however, sealed up among the drone cells! Great curiosity did I feel to examine it, but prudence prevailed, and I restored it to the hive, making all snug again as before, in the hope that they might have carried a worker-grub thither, and that in due time a queen would issue from the cell. On the 10th of April, however, I discovered the bees in B in a state of violent agitation, as they always are when their loss of a queen has been perceived. If they had not been so savage I should have taken out their royal cell again to inspect it; but the life of every bee is precious at this season of the year, and the hive was thinly peopled. Assuming, therefore, that no queen was hatched and that the bees had lost hope, I proceeded to the fourth and fifth operation (see page 270), and drove E, queen and all, into an empty box full of comb, and placed E with its brood over B. In a very short time the lower hive was deserted, and peace reigned among the agitated bees.

The long and short of all these changes is that I am still uncertain whether I have succeeded in gaining even one additional Italian queen. The queen of B, should the bees rear one after all, will be almost pure English, but she may be impregnated by a pure Italian drone. Such are some of the difficulties which attend the establishment of the Italian race of bees in this country.

All the hives, however, appear to be doing well. They now stand as follows:—

A. Pure Italian queen (now strong).	B. Bees in process of rearing a queen out of English brood (strengthened).	C. Vacant.
D. Hybrid Italian queen (strong).	E. English queen (strong).	F. Bees rearing a queen out of Italian brood (strengthened).
G. Vacant.	H. English queen (straw hive; strong).	I. English queen (straw hive; weakish).

—B. & W.

FEEDING BEES.

DOES "AN AYRESHIRE BEE-KEEPER" not find his mode of spring-feeding described at page 286 impede the ventilation by partly stopping up the entrance, and bees descending from off the brood to feed during cold frosty nights get as well as if chilled, and consequently perish? These evils do not apply in

the bottle or other top plan; besides it seems more natural, the food being supplied as near as possible to where it is to be stored.

As this seems to be an open question, it would be interesting were some of your many experienced contributors to express their opinions. Would "AN AYRESHIRE BEE-KEEPER" say if it is by this mode, or how he administers his autumn or main supply?—AN INQUIRER.

A DESERTED HIVE.

I AM obliged to "AN AYRESHIRE BEE-KEEPER" by the notice he has taken of the communication to your Journal by one so completely a novice in bee-keeping as I am. Allow me to ask how the narrow tins he recommends can be used below? How are they to be introduced into the hives? They cannot be admitted through the ordinary opening in the floor-board, and I presume the hive has not to be lifted each time, as thereby the bees would be much disturbed; moreover, the comb comes too near the floor-board to allow even a razor-strop to be introduced unless a groove to receive the feeding-trough were made in it. Were this plan adopted, when it was not in use the trough might be reversed, and so the floor-board might be refitted to its ordinary level.

But alas! these schemes are to me visionary, for my hive that on March 4th appeared to be doing well was deserted by its occupants about a fortnight afterwards. My neighbour told me that he noticed the bees weak and scarcely able to return to their hive at midday. On examining the hive I found it empty of living bees and with very few dead. I looked most carefully for the queen, but could not find her. There were bee-bread, a few young bees in the comb, some just issuing from their cells, but no honey nor stored sugar. I could not at all account for the desertion, unless the opening at the top where the feeding-trough was placed had made the hive too cold and draughty for hatching the young, and so they went to look for a more genial home. My hives were in a compact wooden bee-house, so that they are not much exposed to any alteration of weather, and are quite protected from sun, wind, or rain. When I begin again I must hope for better fortune.—B. J. S.

[Yours may be a case of desertion similar to one we have just witnessed in our own neighbourhood. Although ample food was presented to them in a trough on the top of their hive, the bees refused to ascend into it, and deserted their habitation and young brood in all stages to seek their fortune elsewhere. We believe the same food would have been accepted without scruple if offered by means of an inverted bottle, and that in all probability the result would have been very different.]

REPLY TO MR. FAIRBROTHER'S INQUIRIES.

WITH regard to the query of Mr. Edward Fairbrother, page 236, "What is the best method of insuring a succession of fertile queens?" it is certainly not easy to answer, for one that may be prolific now may be the reverse next year, from circumstances not easily explained. The best method I know, is to have a thorough knowledge of all the stocks in autumn, and to keep those only that have already proved themselves prolific, and young queens and combs, although I have had a queen seven years old, breeding well in all these seasons, which did as well the last year as the first. Another remarkable circumstance was, that I never saw it breed more drones in a season than about fifty, but I do not think that any advantage.

"Are there any facts determining the flight of bees in search of honey?" I have never been able to come to a definite decision on that point, for I never was in a district where bees were further from each other than six miles. I have seen them working often midway between the two places. In 1858 I had a hive that made 20 lbs. of heather-honey, from at least three miles distance, in ten days. Of course, this was scarcely the half of the weight that those made which were placed in the immediate vicinity of the heather. I have proved that bees when within one mile of an abundance of the flowers that they work on, will make in a good day exactly the same weight of honey as there is weight of bees in the hive.

[We think there must be some mistake with regard to a queen bee living and continuing fertile during seven years. Also, with respect to bees returning from six miles distance. We once had two apiaries about two and a quarter miles apart, and although

we frequently shifted stocks from one to the other during the height of the working season we never saw one come back. Will Mr. Fox who has, or had, four different apiaries within moderate distances of each other, favour us with his experience on this point?]

I once knew of some hives that were removed six miles to the heather, and in the evening when the proprietor visited the spot where his bees had stood, was astonished to see large clusters of bees hanging on the posts. Of course, this might arise from the bees flying to the same direction they used to stand in, and their coming to the place where they used to work would naturally lead them to their old stand. If spared in health I hope by the end of the summer to be able to come to a decision as to how far they fly, from watching the Ligurians, as I think there will be none in this locality but my own.

With regard to the honey season, the bees in this locality commence carrying pollen on an average about the 9th of February, but no honey till about the second week of April. They then begin to get a little honey from the blossoms of the gooseberry, &c., always increasing in quantity as the blossoms come out, but never in larger quantities than what is barely sufficient to carry them through with their labours till about the first week of June, or, according to the seasons, varying from the first to the third week; and they continue from two to three weeks working on the white clover flower, or blossom of the bean and charlock, or wild kail (I do not know the botanical name of the last-mentioned), close to their proximity. So that if that time is wet they produce nothing beyond, perhaps, a few well-peopled hives, but void of honey or combs, as has been the case in 1860-1 and 1862, but in good order for the heather harvest, as we often find the bees producing greater numbers in showery weather than in bright sunny weather when much honey is to be had. The only honey harvest I have had these three years was in 1862, at the heather; it lasted from the 13th July till the end of August, when my hives made from 40 to 50 lbs. of honey, besides keeping themselves during that time.

As to their increase and decrease of weight at different periods, I have all along weighed my hives at different times of the day—thus: if we weigh a hive in the morning that is likely to make weight during that day—suppose it makes 5 lbs.—weigh it the following morning and you will find it about one-sixth lighter than what it was the preceding night; and, again from their great decrease at certain periods—viz., perhaps after one week's fine honey weather when the hives were fast increasing in weight and well filled with young brood, &c., the weather breaks and, perhaps, continues broken for a long time. At this time, perhaps, a hive weighs 50 or 60 lbs., one-third, perhaps, consisting of young bees and liquid stuff for their sustenance, so that the honey is immediately sealed and their labours now past on account of the weather. They allow all the young bees to come out and not replacing others, and by the extirpation of the drones, &c., all tending to lighten the hive which truly astonishes many; but if carefully watched and understood it is easy to understand the cause of some hives making more and losing more at one time than another.—A LANARKSHIRE BEE-KEEPER.

ASPECT OF BEE-HIVES.

MR. BEVAN FOX has given his opinion in what aspect bees ought to be placed, and no doubt if we had a climate the same as Italy he would be right. I dislike moving bees from their original site, unless to a great distance; but if the hives during winter and spring were merely turned on their stands to the north, it would save a great many bees from being chilled to death in cold weather, particularly when snow is on the ground, and the sun's rays begin to reflect more than usual heat.

In former Numbers of THE JOURNAL OF HORTICULTURE I have advocated a south and south-eastern aspect as the best, and in the changeable climate of Great Britain, with our hot summers "so few and far between," I am still of opinion something near the south is the best.

I once visited an Oxfordshire bee-keeper who changed the aspect of his bees every autumn, and also moved at least half a dozen of his hives several yards. On examining these last immediately after, the bees were fighting desperately, having mistaken other hives for their own, and this continued for at least a week, to the great decrease of their numbers.

Virgil recommends very properly a sheltered situation, and at midday heat a little shade. But in the last three summers (1860, 1861, and 1862), what shade has ever been required even

in the southern part of England? Nevertheless, I have seen terrible effects from a neglect of shade by careless bee-masters, such as the honey running out at the entrance of hives, the bees, in a state of almost madness, flying at every one who came near, and certain destruction by one-half or more of them being suffocated in their own sweets, by the melting of the combs. Early swarms are destroyed first, as the combs melt much sooner than those of old stocks.

Those hives placed under high walls are generally affected by heat first, and the real safeguard against being surprised in one of our hot summers, similar to 1846, or July, 1859, is a wooden bee-house, which shades all the hives at noon; and these bee-houses have their disadvantages also, by harbouring spiders and other troublesome insects, and also being, in fact, too much shaded in our cold, wet summers.

On the whole, the best safeguard is constant attention, and bees require constant looking-after. In the spring and autumn the worst enemies are those of their own species which acquire predatory habits and fly a long distance to plunder their weaker neighbours, and this propensity to plunder is one of the few bad qualities they possess, and most difficult to be overcome.—H. W. NEWMAN, *Hillside, Cheltenham.*

COOKING HAMS.—A ham of 10 lbs. should be boiled slowly in a pot without a cover, and that for the space of nearly two and a half hours. To ascertain if sufficiently boiled, try if the skin will come readily off, and if so, it is fit for use. Before sending it to table, the ham is generally subjected to a little ornamental dressing. We do not refer to the ornamenting and covering of the bone with a net or cut paper, but the browning where the skin has been removed. There are two ways of doing this. In the one, you cover the surface with bread crumbs, and keep it in the oven until it attains the proper colour. In the other, you sprinkle sugar on the ham, and pass a red-hot iron over the surface, and thus impart to it that rich glossy brown which so many admire.—(*Scottish Farmer.*)

OUR LETTER BOX.

SHANGHAI HENS DYING (*D. B. Shirley*).—There is no doubt about the case. The hens going on to the nest, and dying without laying, is always an unmistakable intimation that they are what is termed "egg-bound." The egg-passage is in such cases usually encumbered with fat, the passage is rendered by the pressure too narrow for the egg to pass, and inflammation and death ensue. You will see in our Number for April 21st how a Duck ought to be treated under similar circumstances. Treat your hens the same and reduce their food now, for prevention is better than having to cure.

INCUBATOR (*A. A.*).—We know of no maker of incubators now. An advertisement might bring one forward. Gas or argand burners connected with a hot-water apparatus were employed in them. They were expensive, and soon given up by those who bought them.

PIGEONS IN A GARRET (*Woodpigeon*).—Keep Pigeons in a pigeon-house, and not in the garret of an inhabited house; they cannot fail to be disagreeable. Pigeons of different varieties do breed together.

FEEDING BEES (*A Reader, Dumbartonshire*).—When the holes in the perforated zinc become closed it should be removed, and a clean piece substituted; but we have never found this to be the case whilst regular feeding is in progress and the bees take the food freely. If there be sealed honey in a weak hive feeding is, of course, not absolutely required, but may be of service in the spring by promoting egg-laying. In early spring bees appropriate syrup but slowly, and in very cold weather leave it quite untouched.

PROTECTING BELL-GLASSES—UNITING STOCKS (*Gardenia*).—Bell-glasses require to be kept warm by being enveloped in flannel or some other good nonconductor, but need not be fixed with putty or any other cement. We advise you to write to Messrs. Neighbour & Son, 149, Regent Street, London, respecting your second query. In any case killing bees is a wanton waste of valuable life, since, by means of driving, the inhabitants of condemned stocks can always be advantageously employed to strengthen those intended to stand the winter.

CHOICE OF HIVES (*J. W. P., Derby*).—For ordinary bee-keeping a flat-topped straw hive, with central aperture for feeding or supering, in other words, one of Payne's improved cottage-hives, which are supplied by Messrs. Neighbour at half-a-crown, will answer as well as any. But for experimental and scientific purposes we recommend the Woodbury frame-hive, which may be had in straw at a moderate price.

LONDON MARKETS.—MAY 4.

POULTRY.

Strong chickens are comparatively plentiful, and afford proof of the mild winter we have had. Fowls are, and will be scarce, but we think there is every prospect of a good supply during the season.

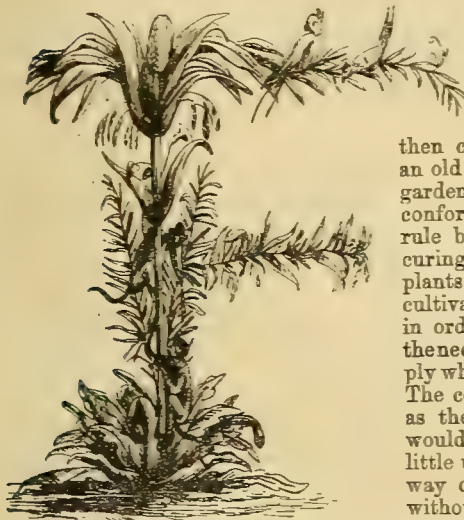
	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	4	0	to	4	6	Guinea Fowl	0	0	0
Smaller do.	3	0	to	3	6	Hares	0	0	0
Chickens	2	0	to	2	6	Rabbits	1	4	to
Goosings	5	6	to	6	0	Wild do.	0	8	to
Duckings	3	0	to	3	6	Pigeons	0	8	to

WEEKLY CALENDAR.

Day of Mnth	Day of Week.	MAY 12—18, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				degrees.			m. h.	m. h.	m. h.		m. s.	
12	Tu	Helleborine flowers.	29.866—29.572	67—39	E.	—	15 af 4	37 af 7	44 1	24	3 52	132
13	W	Tilli died, 1740. B.	29.858—29.836	61—33	N.E.	—	14 4	39 7	6 2	25	3 53	133
14	Th	ASCENSION. HOLY THURSDAY.	29.866—29.850	57—42	N.E.	.13	12 4	40 7	28 2	26	3 53	134
15	F	Bryony flowers.	29.889—29.756	60—46	S.W.	.46	11 4	42 7	51 2	27	3 53	135
16	S	Cotton-grass flowers.	29.908—29.813	67—40	S.W.	—	9 4	43 7	18 3	28	3 53	136
17	SUN	SUNDAY AFTER ASCENSION.	30.100—30.045	76—41	S.W.	—	8 4	45 7	sets	●	3 52	137
18	M	Purslane flowers.	30.113—30.009	80—42	N.W.	—	6 4	46 7	49 af 8	1	3 50	138

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 64.5° and 41.4° respectively. The greatest heat, 86°, occurred on the 15th and 17th, in 1833; and the lowest cold, 25°, on the 15th, in 1850. During the period 147 days were fine, and on 105 rain fell.

ORNAMENTAL LEAVES FOR GARNISHING THE DESSERT.



I R S T catch the hare and then cook it," is an old adage. The gardener must conform to the rule by first procuring seeds and plants, and then cultivating them in order to have the necessary supply when wanted. The cook as well as the gardener would be of but little use in their way of business without having the proper materials necessary to carry on their various operations.

What, for instance, can be more tantalising to a gardener than to sit down and read, "So-and-so" is admirably adapted for such a purpose, and "such and such" will give a charming effect to "so-and-so," when at the same time, perhaps, the chief in command has little if any of the things recommended? This, then, being a good time to procure seeds or plants from which ornamental leaves can be obtained, a list of the plants which have been used here with good effect may not be out of place.

First, then, I would recommend all gardeners to secure a good supply of the *Poinsettia pulcherrima*: indeed it is almost an impossibility to have too much of this truly useful plant. Having ourselves last season upwards of two hundred plants we found that we were not encumbered with one too many. The richness which the scarlet bracts of this plant give to almost any kind of fruit can scarcely be conceived, especially if arranged on white china and a few Fern fronds intermixed. Next in importance are the beautiful crimson leaves of the *Barbrossa* and West's *St. Peter's Grape Vines*; we find that these latter produce prettier foliage when grown in pots. *Coleus Verschaffelti* and *Ampelopsis hederacea* (*Virginian Creeper*), also produce pretty foliage; also *Copper Beech*, *Mahonia aquifolia*, *Begonia Lowii*, and other varieties. *Caladium*: of this tribe there are some kinds very pretty and exceedingly useful, especially the small-leaved varieties. Some kinds of Pear leaves are very ornamental in the autumn months. *Centaurea* and *Cineraria maritima* will give a somewhat frosted-silver appearance and make a nice contrast to high-coloured leaves.

No. 111.—VOL. IV., NEW SERIES.

I have no doubt that many additions might be made to this enumeration; but with the above and a tolerably good supply of Fern fronds, Ivy, Moss, and similar green materials, a very fair show can be made.

When very large dishes are used on which a miscellaneous collection of fruit is required, some of the following may be employed with good effect:—Gourds, of which there are many very ornamental kinds admirably adapted for the purpose; one or two Tomatoes, Capsicums, Shad-docks, and Oranges with a leaf or two attached; and the *Pyracantha*, *Cotoneaster*, *Berberis*, and *Cape Gooseberry* are also useful in their way for smaller dishes. Most gardeners have access to fruit and flower shows, and yet few see any other arrangement of the dessert than that for which they have to provide.

I have noticed many times, and not without a considerable amount of grief, bunch after bunch of Grapes piled up one above the other in order to gain height; but why should the gardener be at all the trouble and anxiety of obtaining fine and well-bloomed bunches of Grapes, part of which are to be hidden from view? Cannot some of our great china-dish manufacturers produce something more light and elegant on which to affix bunches of Grapes? Surely something of a branch-like form could be invented with, say, four or eight branches from a centre stem; Grapes suspended from the ends of these branches, would I am sure, have a more natural and elegant appearance, and the attainment of that great point in Grape-growing—viz., securing a fine bloom, would be much more encouraged.—JOHN PERKINS, *Thornham Hall, Suffolk*.

FORTHCOMING NOVELTIES.

I HAVE no wish to be classed with weather prophets, and racing prophets, and that numerous tribe of prognosticators and clairvoyants who are very bold in their assertions generally, but would rather not be held to any particular utterance that may test their powers too closely. There are always little disturbing causes, as Admiral Fitzroy calls them—little ifs, which, inconsiderable as they seem to be, do most marvellously interfere with all our calculations; and even when we have the apparent safe ground of past experience to guide us, make them not to be depended upon. Of this a trifling instance occurred to me only yesterday. Amongst the *Verbenas* I received last year from many quarters, there was a continental one named *l'Avenir de Billaut*, which struck me as being particularly worthy of general cultivation. This opinion was shared by my friend and neighbour, Mr. Banks, of Sholden, to whom I gave some cuttings, as he was anxious to grow it for seedling from. He has this spring several plants of it, and they have sent up the most miserable trusses possible, and in its present state no one would desire to grow it. But this, again, may be an exceptional state, and it may by-and-by come to its former fine condition. It is an instance, however, of the extreme difficulty of forming decided opinions, especially on yearling flowers, and ought to moderate both our praise and censure.

No. 763.—VOL. XXIX., OLD SERIES.

As I have mentioned VERBENAS, it may be as well to say a few words on the many candidates for public favour appearing this spring from various parts, and this notwithstanding that it was said that we were not to see so many novelties as usual this year. From north, south, east, and west they come. Suffolk, Norfolk, Dorsetshire, Kent, Leicestershire, Sussex, all send their quota; and this not single examples, but whole collections, many of which are unknown as yet beyond the limits of the place where they were raised. At present, then, we must only take the raisers' description, and he must be a very calm and unprejudiced man who can take a just view of his own children, can see their defects, and moderately praise their excellencies. We must wait for time to prove whether their descriptions are overdrawn or not. Amongst the lot let out by Messrs. Low & Son, and raised by Mr. Miller, of Upway (the raiser of Foxhunter), there will be found, if I mistake not, some flowers of real merit. Ruby and Rosalie are novel in their colour, besides being large, and of a good habit of growth. Purple Emperor, too, when I saw it, looked well, and was the best of a large number of the same shade of colour, all the others having been discarded.

Messrs. E. G. Henderson & Son advertise several very desirable sorts, amongst which is White Lady, stated to be far superior to Mrs. Holford, more free in flowering, and much purer in colour. This will be a most decided acquisition. They also announce other bedding varieties. The distinction between bedding and exhibition sorts ought always to be kept in view. A bedding variety ought to be short-jointed in its habit, and free in flowering, and should be entirely of one colour. If straggling the result is, that the centre of the plant is bare, and the extremities only furnished with bloom—a very ugly thing in a bed; and when there is a large yellow or white eye it detracts from that uniformity of tint which is absolutely necessary for effect. Of course, where a flower is to be cut and placed in a stand the case is entirely altered, although we think that a mixture of the one-coloured varieties with the auricula-looking sorts is even there desirable.

Mr. Charles Turner lets out this year some of Mr. Perry's seedlings of the same strain as his former fine exhibition varieties. A new white, too, he announces to us under the title of Grand Boule de Neige, from the west of England. This, too, is declared to be very fine. There is also another White Lady from Mr. Knight, of Battle, said to be very good. Of Lord Leigh sent out by Messrs. Perkins & Co., of Coventry, it is unnecessary to speak. They have exhibited it at the spring shows in considerable quantity, so that many of the flower-loving public have had a good opportunity of seeing it. It is of the Foxhunter style of flower, and very fine. Downie & Co.'s Lord Craven, promises to be a good bedding variety, as it is said to be of the style of Purple King, larger and fuller, and lighter in colour. I saw but one truss of it last season. Of the other collections I know nothing; but of this there can be no question, that if they are really as meritorious as the raisers consider them to be, we shall hear something more of them by-and-by. From the Continent, too, several are announced, but we have learned to be very cautious in our admiration of the importations from France and Germany. They see things with such a roseate hue, that it is oftentimes hard to think their opinion of what is *superbe, magnifique, charmante*, &c., agrees with what we think to be good; and few really good Verbenas have come to us from thence during the last two or three years.

There is every encouragement to raisers of seedlings to cry "Forward." We want many colours for bedding purposes—blues, whites, pinks, &c., and I hope that we shall this year see much progress. There is so widespread a love for flowers now that a really good thing is sure to be successful, and there is such opportunity of judging of the various productions, that no power exists now of pooh-poohing what is really valuable.—D., Deal.

LADY GARDENERS.

I NOTICED in your Number of April 28th the remarks of Mr. Bass, of Burton-on-Trent, upon the subject of orchard-houses. Like a good kind husband, he gives his wife the whole credit of his success in growing fruit trees in pots. And let me observe, how often do we see lady gardeners excel in the cultivation and arrangement of flowers when they give it their attention.

Some of your readers, no doubt, have visited Richmond during the summer months, and may, perhaps, have noticed a good-sized brick house on the other side the river. Now, this house

is occupied by Mr. Justice Halliburton—the "Sam Slick" of literary notoriety.

I paid a visit to these gardens about two years since on the occasion of a fancy fair given for some charitable purpose, and never do I remember to have seen bedding done so well, or so choice a collection of plants brought together in a place of so limited an extent. I was given to understand by a florist of some celebrity, who was present, that the arrangement of the beds and collecting the plants were in the hands of the lady occupier herself.

Their taste for the harmonising of colours I consider natural in all women of refined education, only unfortunately most of them display their taste in decorating themselves more than in ornamenting their gardens.

But if ladies were to follow gardening more usually than they are apt to do, how much oftener we should see the cheek resemble the Rose in place of the Lily; and how soon, also, we should perceive the lighter tints made use of in decorating the inside of the bonnets. They would soon be aware that glaring colouring was not suited to their complexions so well as the more subdued shades.

Moreover, God has given us health that we may enjoy the blessings He sends, and depend upon it, that where a lady gardener resides it is there the physician's carriage seldom stops. —A FRIEND TO FLORICULTURE.

A CHAPTER ON HERBS.

WE are told that a garden of herbs was what the Israelitish king of old intended to have made of his neighbour's vineyard which he coveted; though whether he eventually turned it into that purpose after he had so unscrupulously obtained possession we are not informed, neither are we told the description of herbs in use at that early time. There is, nevertheless, reason to believe that the list was far from being a meagre one, as it is probable some plants disregarded by us were in favour at that time, and even the term "herb" is not fully understood at the present day; for I remember not long ago, that the Judges at a horticultural show (myself being one of them), were called in question for awarding a prize for the best collection of herbs to one in which there was a bunch of Rosemary. A cottager called us to order, insisting that the collection in question ought to have been disqualified, Rosemary being more a shrub than an herb. Without, however, entering upon this knotty point, I will take the liberty of including such plants as this in our present category of herbs, which, in fact, is understood to comprehend most plants more or less scented, and used in some culinary way, or in some other manner which renders it advisable to cultivate them, more or less extensively, as they may happen to be wanted. It will not, however, be necessary to go into the details of every individual plant, but it will be sufficient to arrange them in groups, so that the treatment of one may in a great measure suffice for others in its class.

ANNUAL HERBS.—Basil, Sweet Marjoram, Summer Savory, Chervil, Borage, and others, are in ordinary use, and all more or less ripen seed and require resowing year after year. The first three are better sown in a pan or slight hotbed, and afterwards planted out in May. Chervil, being less delicate, is seldom treated to such indulgence; and Borage frequently ripens its seeds and sows itself in much the same hardy manner that Mignonette does in other places. This is also a nearer approach to a perennial, or, at least, a biennial, and in some districts is rather a favourite with those having bees. Its use dates back a very long time, and, after experiencing a long period of neglect, is likely to become fashionable again.

There are several other plants in more or less repute that might be added to this class, as Caraway, Purslane, Coriander, Marigold, Ice Plant, and it may be Nasturtium, and even Tomatoes; but these last-named plants deserve to be noticed in a separate article: therefore, I will pass on to another and much more important section of garden herbs, which is both numerous, and some of them highly useful.

PERENNIAL HERBS.—Of this class we have several which a botanist would not willingly call herbs, as some of them contain hard woody matter, which does not die down in winter, as Hyssop, Sage, Winter Savory, Lavender, as well as Rosemary, previously mentioned. All these may be classed as evergreen shrubs of low growth. But it is not the purpose here to raise that question; they are all regarded as herbs, and form important

items in the herb-border or garden. Their treatment is all much the same; they are all propagated by cuttings, which, if put in during damp weather in early summer, strike root freely.

Sage is, perhaps, the most delicate of this class, and requires to be grown on dry ground. In very cold and exposed situations in the far north it is liable to be out off in winter. Dry, gravelly, or stony ground seems to suit it best; and whether it be sheltered or not, it is always advisable to make new plantations every year, as the old plants are liable to die-off at the collar. Hyssop is more hardy, but less used, as likewise is winter Savory. Lavender may last four or five years perhaps, but seldom longer. This, too, likes a dry gravelly soil, as passengers travelling on the Great Northern Railway may have inferred from observing the fields of it near Biggleswade and elsewhere, and which when in flower sent the neighbourhood with the odour, and rival the best flower-bed in the parterre for colour. Thyme also possesses a hard woody stem, which lasts as long as the plant lives, which may be regarded as three years, perhaps—certainly not more in general. This plant, however, seeds and reproduces itself abundantly, and is very accommodating as to situation; nevertheless, it prefers a dry one, and when grown in such its aromatic principle is no doubt stronger, and, in fact, this is the case in almost everything so grown.

Differing from the above in the woody principle is Fennel, which I believe thrives best on the rocky promontories by the seashore. Its absence in early spring is scarcely less regretted than that of Parsley when a hard winter has told upon it. It is, however, a true herbaceous perennial; and but for the severities of a long winter, and the unsuitableness of certain situations, its duration may extend for very many years. On stiff wet soils it is, nevertheless, liable to die-off after seeding, in which case I have known some wild place amongst the shrubs had to be sought over for some plant that had accidentally been carried there, and nestled itself amongst the claws of the tree it had taken shelter under, and which had braved the winter by being less gluttonously fed. Tansy is also a herb of somewhat similar habit, only requiring a stiffer soil and moister place; and while mentioning these two plants, I may point them out as possessing foliage of as great beauty as any Fern we know of.

Angelica also likes a stiff soil, while Tarragon must be humoured with one of a contrary description, or there is a chance of losing it, although it is far from being a tender plant. Rue attains the character of a shrub; and some cottagers, anxious to cultivate it for sale, have grown it advantageously against a wall to the height of a dozen feet or more, cutting off the front breastwood every year. Rosemary, before alluded to, may be treated in like manner, dry situations suiting them both. Opposed to both these in habit, and in general utility second to none, is Mint, which delights in a rich damp situation, but requires replanting every two or three years at farthest. A slight covering of fresh soil or leaf mould in winter is good practice. Lemon Thyme is of much longer duration, but require a drier place. I am far from certain whether Pennyroyal likes a dry or damp situation; most likely a medium one suits it best, as also Camomile, which, however, requires replanting every second year, or even every year, and that, too, upon fresh ground, as, in fact, all herbs ought to be planted. The flowers of double Camomile have been in great repute for some purposes for a long time, but whether the double contains the useful principle in greater abundance than the single is more than I can learn. A bed of Camomile, however, is always an interesting object.

There are several other plants occasionally included in the herb-bed, as Burnet, Chives, Vervain, Garden Balm, and Balm of Gilead. The last-named is scarcely hardy. Garden Balm will speedily run over everything else, and is more robust than useful. One or two kinds of Sorrel are also cultivated there occasionally, but they are more in the character of salad plants than herbs in the usual sense. Some collections also contain wild plants, as Agrimony and Betony, and one or two poisonous plants not infrequently find a place here; but as the most useful and common ones have been enumerated, it remains only to describe in general terms the position the herb garden ought to have, when taken in conjunction with the positions of other plants cultivated in the kitchen garden and elsewhere.

It is too much the fashion now, when recording the usefulness of a plant, to insist on its having the best place in the ground, and by-and-by something else is brought forward with the same claim to pre-eminence. Thus, indifferent positions are rarely recommended at all, although we all know places of that kind abound alike in the garden of the prince and in that of the

peasant, and it would be wrong to assign everything the first place in the garden. Useful as are the greater number of herbs mentioned in the above list, it is nevertheless true that other things in the list of every-day necessities are of more consequence, so that the herbs must give place to their more useful brethren. An outside border in many gardens, called the slip, will in general do for the herbs; taking care, wherever they are planted, that those in most esteem have the best place, that the proportion of those most wanted be the largest, and that those kept merely to meet any sudden demand may be in such small quantities and in the least favourable situations that their supposed claims to notice may entitle them to. As regards those occupying the more prominent position, some little regard might be had so as to give them as nearly as possible the different soils they require in order to succeed well.

Generally speaking, a medium soil suits all, but some require a little more sun than others; and some, as Mint and Pennyroyal, do tolerably well in the shade; while Sage deserves one of the best places at command, as likewise does Tarragon.

The rotation of cropping is also as necessary here as elsewhere; and a due regard to propagating at the right season such plants as want it, will do much to maintain the uniform neatness of the cropping that is advisable everywhere. Though the herb department is less really useful in supplying the table with the materials necessary to fill the dishes, it is to the botanist and lover of plants a place of more interest, the number of species cultivated being greater; and differing as they do in many respects from each other, and from those cultivated elsewhere, who, then, can say that the "garden of herbs" is not deserving of more attention than it often receives? And when neatly arranged it may be kept in a manner that would render it a fit connecting link between the kitchen garden and dressed grounds, and an interesting feature in an establishment, to which company might be invited in order to study the various purposes in social economy to which the many interesting plants there collected are applied.

J. ROBSON.

ORCHARD-HOUSE TREES.

"I do not like thee, 'R., of S.,'
The reason why I cannot guess,
But yet I really must confess
I do not like thee, 'R., of S.,'
I like thee better 'D., of Deal,'
And think you are a clever 'chiel.'"

As the controversy on orchard-house trees has now reached a new phase by the introduction of both poetry, prose, and doggerel by the combatants on each side, will you kindly allow an old gardener to give in your pages his notions on the subject? I believe that both Mr. Robson and Mr. Keane are right in all they advance respecting the cultivation of orchard-house trees, and that it is not possible to have fruit so large and fine in pots as on planted-out trees in the borders of houses or walls. At the same time, Mr. Rivers and Mr. Pearson deserve credit for the fairness and pertinacity they show in defending their hobby when attacked. Orchard-houses when understood and well managed are useful structures in such a variable climate as ours, and to the amateur and gardener who have only limited means, they are a source of great satisfaction if not of profit. On this precious morning (the 1st of May), the thermometer denoted 6° of frost in the locality from which I write, and Apricots on the walls where unprotected are frozen as black as one's hat, although they are nearly as large as black-bird's eggs. Now, the orchard-house pot-tree-grower knows that his fruit is safe in such seasons, and so far he has a great advantage. Some ill-natured cultivators may insinuate that it is greatly to the interest of Mr. Rivers and Mr. Pearson, who are growers for sale of fruit trees in pots, to puff up their productions; but as they invite all interested to see them and taste and try, I do not see what they can do more. One thing I do know is, that until the management of orchard-houses is better understood, the sale of pot-fruit trees will be greatly increased, for the murder of these by bad ventilation and houses wrongly constructed as to the heating, is greatly on the increase.

I now mean to try and break a lance with the "brave and faithful knight, 'R., of S.,' of orchard-house celebrity." In his earnest endeavour to cry up all the uses and advantages of orchard-houses, I think he tries to prove too much, and is like the great man in the play—

"I am Sir Oracle,
Let no dog bark at me."

His attack on Mr. Robson, Mr. Keane, and all practical gardeners who do not subscribe to his notions on orchard-houses, by declaring that their "walls have enclosed their gardens and their minds," is rich in the extreme.

Mr. Keane may not, perhaps, be able to inform "R., of S.," how many pamphlets were published on Polmaise heating and coiling Vines, and what success they had. It is, however, satisfactory to know, that those systems when first promulgated were successfully exposed by practical men.

As "R., of S.," winds up with a scrap of poetry, I shall do the same with a couplet written by a famous hand at composing doggerel rhymes—

"Whene'er you write on potted trees,
No 'Keane' remarks make, if you please."

—P., of Q.

OLD VINES VIGOROUS BUT UNFRUITFUL.

I HAVE an old-fashioned vinery heated with a flue and planted with Black Hamburg Vines (now very old), and for years past I have had a capital crop of Grapes. The winter before last I made a hotbed with stable-dung in the vinery, but it was too powerful for the Vines. I was obliged to cut them down to the bottom of the vinery. They then broke and made capital wood to the top of the house. I gave plenty of air and the wood became quite ripe and looked in first-rate condition; those who saw them said I should be sure of a good crop this season. However, I am greatly surprised and disappointed to find I have only a very few bunches at the top of the vinery, and all those gone, or going, blind.

The vinery has been kept at a regular heat, not above 65°, with air occasionally. The Vines are making first-rate wood this season, except one shoot that is about 2½ feet long in the middle of the vinery, and the foliage is all going like the leaves enclosed. I have discontinued fire heat since I found out I should have no Grapes.—H. H. C.

[I have glanced over your case and should have liked your statement to have been more explicit as to time of firing the vinery; and as to the leaves sent, if they belong exclusively to the weak Vine. If so, lose no time in having it out at once. It is smothered with fungal spots, the result of unhealthy root-action; and I am greatly deceived, though the leaves are much dried, if there is not also an incipency of the dreaded mildew, and the plan you are now adopting of giving air occasionally and shutting off the fires is the best means for causing it to spread all over the house.

Now, first, it would be interesting to know when you put into the house the stable-dung that was too powerful for the Vines. Of course, if you took dung that was rank and fresh from the stables after the Vines broke, then I can conceive how the Vines were injured; but I cannot see how they could have been so injured by a mere hotbed if the manure was sweet, as I have seen many such hotbeds in houses. Neither do I see how the Vines could have been injured by rank manure being brought in when they were in a state of rest, as though I have no opportunity of doing such a thing now, I have had a vinery such a mass of pungent steam for three weeks that you could scarcely see your finger at an arm's length; but then care was taken to have the huge heap sweet enough for Cucumbers before the Vines broke, and care also was taken to keep the sweltering hot heap at a respectable distance from the stems of the Vines. I know successful cases of this mode of using unfermented litter, and I have known of cases in which there was mischief done from being too venturesome and keeping the houses too close, and if "H. H. C." has no particular reasons for the contrary, it would be instructive to know how the mischief was done, as I have a strong belief that a failure rightly used is quite as instructive as a success, only it requires a little more moral courage to let all the causes of a failure be known—that is to say, if we do know them; for the most corroding thing is to find the failure and be at sea wholly as to the causes.

I had a note the other day about Vines cut over a few inches below the soil, and because the proceeding has next to failed, without telling me anything of the plans adopted I received a genteel hint that I must have had wonderful magnifying spectacles on when I saw the Vines at Woodstock. Fortunately for my own eyesight, I received by the same post the simple statement that these Vines so cut over seem to be the best this season at Woodstock. Now, the plans adopted in the case of failure would be instructive, and as no one can describe a case

of success so well as the manipulator, I trust that when he has time Mr. McDonald will himself tell us the particulars of his treatment of those Vine-stems which he so unceremoniously sawed across. "H. H. C." would also be doing good in telling us the why and the how he injured his Vines.

Second, I should also have liked, as already stated, to have known the time when the Vines were injured, as then we would have been more sure of the cause of the want of crop this season, which I certainly attribute to a want of ripeness in the strong wood made last season. Did I know that the Vines broke afresh—say in March, or later, that the fires were left off early, and air occasionally given, then I would be certain that I am right in my surmises. I am more convinced of this from the fact of the Vines being very old, as in that case unless the border is flagged or concreted, the roots or part of them would be apt to run deep, and thus be more likely to produce luxuriant rather than well-ripened wood. This extra-luxuriance would be kept in check so long as there was a good regular crop of fruit, which of itself would absorb so much of that vigour, and leave the less for mere wood development. In such circumstances I should have given air freely during the day, left air on in smaller proportion all night, except in very cold nights, and I would have used fire heat, unless when not wanted by the heat of the weather, until the wood was as hard as oak, and the leaves began to turn yellow; and the high temperature and the dry atmosphere would evaporate the mere watery particles from the sap of the wood, and make every bud left fruitful. If I am at all right in my conclusions, I would adopt exactly the same course now, preparatory for next season, as a cool temperature and a close moist atmosphere will be apt, unless the summer and autumn are bright, to produce wood too unripe to be fruitful, with the chance of mildew and other evils in addition. But, of course, I may be wrong in my conjectures, but I think they are rather likely to be right.—R. FISH.]

A COTTAGE GARDEN AND ITS OLD-FASHIONED FLOWERS—DERBYSHIRE.

THREE fragrant Roses, white and red,
And Mint and Lad's-love grew,
And Lillies with their petals white,
And spikes of Speedwell blue;
Carnations, Pinks, and Gilliflowers,
The purple Columbine,
And Honeysuckles round the porch
Their trailing tendrils twine.

Dear homely flowers! whose very names
A fragrance seem to yield!
Ye mind me of my childhood's home,
A cottage half conceal'd
'Mid Fir trees dark, and Poplars tall,
Where now a stranger dwells,
And playmates' names, to memory dear,
The moss-grown tombstone tells.

I love ye better far than all
The modern flowers so rare—
The glaring, gaudy, scentless things
That deck the gay parterre.
I love the Primrose in the wood,
The blushing Dog Rose wild.
I love ye all the more because
I lov'd ye when a child;

For well do I remember how
(A long, long time ago),
I wander'd forth a thoughtless boy
Where yellow Cowslips grow;
With meadow-flowers of brightest hue
I wove a garland gay,
And blew the Dandelion seeds
To tell the hour of day.

Thus fancy roams! and o'er me steals
A vision bright and clear.
A mother's smile I seem to see,
A sister's laugh to hear.
The springtime comes, and summer flowers
Bloom brightly as of yore;
But sister's laugh and mother's smile
Will come again no more.

Glossop.

C. DANIEL.

THE BIRMINGHAM ROSE SHOW.—Our readers will perceive, on reference to an advertisement appearing in another column, that Thursday and Friday, the 16th and 17th of July, are the days fixed for holding the next Show. It is also announced that the prize list and regulations are now ready, and may be had on application to the Secretary.

THE CALABAR BEAN.

I AM very anxious to obtain the Calabar Bean—a vegetable substance just brought before the notice of our profession, and likely to prove of the greatest value: can you give me any information respecting it?—AN HOSPITAL SURGEON.

[The botanical name of the plant which yields the Calabar Bean, or Ordeal Bean of Old Calabar, as it is usually called, is *Physostigma venenosum* (Balfour), a large leguminous climber. Plants of it were raised some years ago in the Botanic Gardens at Kew and Edinburgh; but those at the former have since been lost. We have never heard of its flowering in this country, and do not think it is a plant likely to be cultivated in our hot-houses for its seeds.

The Bean has not yet, so far as we are aware, become an article of commerce; but we believe that it is occasionally brought to the drug markets as a curiosity. We recommend you to apply to Messrs. Allen, Hanbury & Co., of Plough Court, Lombard Street, who are likely persons to possess it.

The current Number of the "Journal of the Pharmaceutical Society" contains a notice of its application as an ophthalmic agent; and further particulars regarding its singular properties are to be found in vol. xiv. of the same work.]

ROYAL HORTICULTURAL SOCIETY.

MAY 5TH.

EXHIBITION OF SCULPTURE.—This is now to be seen at the Kensington Gardens. In the conservatory the statues are very effective, and so are the large groups on the turf before its front. The ranges of busts, &c., in the arcades are not so satisfactory. For instance, the busts are in groups of three, and we observe a very beautiful head of our Saviour placed between busts of Sir Duncan McDougal and Lord Chancellor Truro. There is something incongruous in this. The head of our Saviour on a somewhat higher pedestal, between two such figures as "Purity" and "The Peri," would have seemed to us a more harmonious association.

There are some beautiful specimens of our native sculptors' art, and they are well worthy of inspection; and so is the very artistic arrangement of the conservatory-beds.

FLORAL COMMITTEE.—The Committee held a meeting this day to examine new plants, florists' flowers, &c. Several interesting subjects were brought before them, and the following received their respective awards:—Mr. Standish sent two new handsome Clematises from Japan, one of which produced large, double, globose, creamy white flowers, about 4 inches in diameter, resembling a fully-expanded rose, with a very delicate perfume, the most superb variety yet seen. The other Clematis has a large, single, deep purple flower, which, although not so perfect in form as some other varieties in cultivation, is decidedly an acquisition. Both of these plants were awarded a first-class certificate.

Mr. Wm. Paul exhibited a flower of a new Hybrid Perpetual Rose Lord Macaulay, with remarkably handsome foliage, and of great merit. A first-class certificate was awarded. Messrs. Veitch sent several interesting new plants, among them *Cassiope fastigiata*, a hardy plant resembling the *Ericas* both in habit and flower; *Ourisia Pearcei*, also a hardy plant of dwarf habit, with bright crimson flowers in form resembling the *Pentstemons*; *Steneogastera* sp., an interesting plant bearing white terminal clusters of flowers, well suited for a specimen plant; *Sarmienta repens*, a very pretty flowering plant with bright red flowers; and *Rhododendron Picotee rosea*, one of the handsomest early-flowering varieties, with deep purplish-carmine intensely spotted flowers, and very free blooming. These each received a first-class certificate. *Browallia* sp., which had been exhibited at a previous meeting, from its improved appearance and the exquisite specimen shown had a second-class certificate.

Mr. Bull sent a very interesting and new form of *Athyrium Filix-femina*, which was renamed *sagittatum* from the form of its fronds—one of the most interesting of the endless forms of this British Fern; also *Mimulus Marvel*, a seedling hybrid between the old *Mimulus Gaiety* and Mr. Veitch's *Mimulus cupreus*. We cannot speak too highly of the result of this cross. A first-class certificate was awarded to this and the *Athyrium*.

Mr. Batley, Rugby, sent a box of cut Roses, which received a special certificate.

Mr. Sherratt, gardener to J. Bateman, Esq., sent specimens of six varieties of Moutan Pæonies, of first-rate quality, and of which the pure white were much admired; and with them a handsome spike of *Cœlogyne pandurata*, to which a special certificate was awarded.

Mr. Treen, Rugby, sent a box of cut Roses in very fine condition. Among them were some remarkable specimens of Tea Roses, particularly of our old favourite *Devoniensis*. A special certificate was awarded them.

Many other plants were placed before the Committee. Mr. Kinghorn sent two Azaleas—a double white, with small, compact, but greenish flowers; also a seedling resembling *Criterion*. Mr. Earley, of Digswell, sent a specimen of *Adiantum macrophyllum*, also *Athyrium informe*. Mr. Standish, a small Japanese plant, *Rhaphiopsis elegans*, very promising, and when again exhibited it will doubtless receive a high award. Mr. Watson, of St. Albans, sent four seedling *Dracenas*, one of which was named *Veitchii*, but not differing from other well-known varieties. Messrs. Veitch sent two species of *Scutellaria*, a rose and a white coloured variety; *Calceolaria punctata*, a novel form of this family; and *Rhododendron* Mrs. Buller; *Ourisia coccinea*, much surpassed by *Ourisia Pearcei*; and Mr. Treen, Rugby, cut specimens of *Verbenas*, among them a fine seedling Dr. Temple. Mr. Bull sent six seedling *Zonale Pelargoniums*, among them *Spark* and *Radiancy*, promising kinds; also a *Petunia* The Bride, and *Thuja occidentalis globosa*; and Mr. Watson, a seedling *Zonale Pelargonium* *Advancer*, very similar to Mrs. Milford.

FRUIT COMMITTEE.—Mr. Nash in the chair. Prizes were offered for the best three dishes of dessert Apples, the first of which were obtained by Mr. Hall, gardener to Captain Tyrrell, Fordhook, Ealing, with *Bess Pool*, *Golden Russet*, and *Cluster Golden Pippin*; and the second by Mr. Green, gardener to Mrs. Honeywood, Mark's Hall, Kelvedon, with very fine specimens of *Cockle Pippin*, *Ashmead's Kernel*, and an unknown and worthless variety.

A seedling Melon called *Golden Gem* was exhibited by Mr. Rodgers, gardener to J. Noble, Esq., Taplow. Its great merit is its earliness, and it will no doubt prove a valuable sort; but the fruit had been too long cut, and the flavour was passed. In Cherries, Mr. Freeman, gardener to the Earl of Derby, Knowsley, and Mr. Slater, gardener to the Earl of Cawdor, Stackpole, Pembroke, both sent fine dishes; but as in both instances it was desired by the exhibitors that the fruit was not to be tasted, no award was made. Exhibitors should bear in mind that at the Fruit Committee meetings it is essential that all fruit should be tasted, and that every member present should partake of it.

Mr. Thomson, of Archerfield, sent a bunch of the *Archerfield Early Muscat* all but ripe. It required about another week to be perfectly so. The Committee considered this excellent variety still maintained the high character that they have always given it whenever it has been before them.

Messrs. Downie, Laird, & Laing, of Sydenham and Edinburgh, sent three fine large heads of *Broccoli*, said to be a hybrid variety; but the Committee considered it was not superior to other late varieties in cultivation.

WINTERING NIEREMBERGIA GRACILIS.

I QUITE agree with Mr. Robson in considering damp to be more fatal to this plant than a moderate degree of cold. I have never, however, seen it survive the winter out of doors, and unprotected it will not do so here, even in mild winters like the last. A number of plants that were left standing in the beds where they had flowered the preceding summer are quite dead.

For the last two winters our plan has been to winter the *Nierembergia* out of doors under a shelter of Privet hedge. A shallow trench is first dug out, in length and breadth proportioned to the stock of plants; the trench is then filled with finely-sifted coal ashes, and in this the pots (60's) containing the plants are plunged a little below the rim; a row of Spruce Fir branches is next stuck along in front of the plants, and here they remain from November till March. Since adopting this method we lose comparatively few of the plants, which cannot always be said of those wintered in cold pits and frames, the damp confined air of those structures acting most injuriously on the plants, denuding them of their leaves, save a few at the extreme tips of the shoots, and not unfrequently killing large numbers of them outright. The list of killed and wounded is thus sometimes considerable,

occasioning a serious reduction in the stock, more especially after such a mild open winter as the one just gone.

In consequence of the extreme mildness of the past winter our stock of this favourite plant is unusually fine this year; the strongest plants are, at the present time, literally covered with a profusion of their beautiful pale lilac flowers.—J. DUNN, *Harrock Hall Gardens, Wigan.*

GARDENERS' SOCIETY.

THE able communication of "G. A." on the formation of a Gardener's Company, or general society for the mutual improvement and benefit of gardeners as a body, has, doubtless, met with general approval, for there can be no real objection to the formation of such a society, nor can there be any doubt as to its feasibility. It must also be admitted, that the project is one calculated to prove greatly advantageous both to the profession and the members of it. Granted this much, I trust the subject will not be allowed easily to drop, and that the pages of *THE JOURNAL OF HORTICULTURE* will be open to a free discussion on all matters relating thereto. This I have no doubt will be the case, as the Editors have shown themselves favourable to the scheme. Nothing is more likely to elucidate the matter than a full discussion, for although the main scheme will most likely be generally approved, there are matters of detail which must and will cause some little contention before anything like an amicable arrangement can be arrived at.

For my own part I consider that any restrictions with regard to the exclusion of any particular class ought to be avoided rather than otherwise; for if a body of men are to act in concert for the benefit of all parties concerned, the main object ought to have precedence over all others, and the farther removed any mere distinction of class or grade is from the one grand object, the less consideration should it receive at the hands of those who have to frame the rules and regulations of the Society. For instance: A man may conform to all the rules laid down for admission as a professional gardener, and yet be one in name and appearance, more than from any real qualification he possesses for filling such a position beyond a good personal address, which is often a passport into situations which the possessor is in no way qualified to fill. He may be a successful exhibitor, not because he is a skilful cultivator, but because his subordinates are (for instances are not wanting where the head gardener has obtained credit for what he is no way entitled to, his right-hand man being the real manager, without whom the head gardener could do nothing), in fact, from his position he is admitted as a first-class member, while a utilitarian who has, probably, studied hard and grounded himself in the general science of gardening, is still a utilitarian: consequently he must be debarred from such privileges as fall to those of a more elevated position in the gardening world.

I simply put this in order to show that a man's position is no real guide as to his abilities or acquirements, and where the restrictions are too severe, there is a possibility of the right man being excluded from the right place.

If a society is expected to be successful, it ought to be constructed on the most liberal principles, however unpleasantly it may jar against the feelings of an educated class that others of an inferior grade are to be admitted on equal or nearly equal terms. Still to a certain extent it ought to be borne with. Some distinctions are admissible, and, perhaps, advisable; but they ought to be such as are easily surmounted; for if the society is to benefit all classes of gardeners, a large body of them, probably the most numerous, will scarcely deem it a favour to be admitted on terms that will place their so-called inferior position ever before them.

Such a Company as that referred to will, I trust, eventually be formed; and I still further hope, that the rules and regulations will be framed more with a view to benefit and satisfy all classes of a profession in itself both liberal and progressive, than with any view to show up the various grades and distinctions of its members and votaries. If this is done, the entrance fee and the subscriptions may be high or even extravagant, but they will be paid more cheerfully than if the subscriptions were low, and the great body of members had no vote and scarcely a hearing, but must submit to the dictates of the favoured few, who in consequence of paying higher subscriptions would retain the government of the whole affair.

I am at a loss to understand why "G. A." would require the subscription of employers to be so much higher than that of

others. Doubtless, the majority of them would be willing to subscribe as he intimates; but the question might be asked, What benefit are employers likely to derive in proportion to the amount of their subscriptions? True, there would be the increased facility for obtaining a competent gardener when one is required; but is this likely to occur so often as to justify the amount? Employers I believe would enter into the project willingly, not on account of the benefit derivable from it, but for the same reason that they form horticultural societies—that is, from an interest in the science and practice of horticulture.

Should employers take up the matter and thus give an impetus to the formation of a Company it would not otherwise receive, this would lay the foundation; and with the amount of entry-fees and subscriptions, as "G. A." sanguinely explains, the Society would be fixed on a popular because solvent basis. But then in whose hands should the government of the Society be retained? Certainly not entirely in the hands of employers or any other class. This, perhaps, is the most delicate part of the affair; for although every division should be fairly and equally represented, the question is, how is this to be done? I should be inclined to recommend that the subscriptions of all classes of members be pretty nearly equalised, that all should be allowed to vote freely at the election of officers, &c., and that the offices be open to all classes where men are likely to be found of competent ability to fill them, although it is evident that such are most likely to be found among the educated. Whether there are many in the gardening fraternity who are of my way of thinking in this matter I do not know; I merely give expression to my views, which are opposed to framing a society's rules with one eye directed to caste and the other to the pocket.

However inappropriate it may appear to discuss the laws of a society yet unborn, it is far from being without a purpose, for in this way some useful hints are likely to appear that may be of service to those who may have the framing of them at some future time. But then before this takes place it must be known how far the gardening world would take up the matter in right good earnest, so that were a body of men to form a nucleus they might know what support to expect. Could not every reader of *THE JOURNAL OF HORTICULTURE* who is favourable to the formation of a Company, send his name and that of as many of his friends as are also favourable, and who are willing to be enrolled as members, to the Editors, who, I doubt not, would kindly keep an account of the number, and, perhaps, make it public, so that we may all know how far the proposal of "G. A." is likely to meet with that favour it deserves?—F. CHITTY.

MRS. GAINES' PLANT SALE, SURREY LANE, BATTERSEA.

ON Monday, April 27th and three following days, the whole of the stock of plants belonging to this once-celebrated nursery, were disposed of by auction.

The sale on the whole brought very satisfactory prices, and was numerously attended by persons far and near. Messrs. F. & A. Dickson & Sons, Nurserymen, Chester, purchased some of the largest specimen Azaleas, which realised five guineas each. Miss Macpherson Grant, of Craigellachie, was also a buyer of specimen Azaleas and paid high prices. Amongst other large buyers were Mr. Bennett, gardener to G. S. Foljambe, Esq., Worsop; Mr. Pullenger, gardener to — Rust, Esq., Mitcham, who purchased the Rhododendron Aureum, for five guineas, so many times exhibited by the late Mr. Gaines; also, many other valuable lots. A gentleman from Newcastle was also a large buyer. Thus it will be seen the lots are well scattered about the country.

It is with feelings of regret that we should have to record the last of this celebrated nursery. Neither would it be just to let it pass away without a remark. For many years this nursery in the cultivation of florists' flowers stood almost unrivalled. The Auricula, Pansy, Dahlia, Calceolaria, and Geranium have each been cultivated there to the highest degree of perfection, and no person in the flower market ever had more respect shown her than the late Mrs. Nancy Gaines, who for a period of exactly fifty years was attendant at Covent Garden Market, and whose name for perseverance and uprightness will be remembered for many years yet to come. The same respect is due to Mrs. Gaines the present occupier of the nursery, who may be termed a model obliging woman of business.

Of late the nursery has been used for marketing plants. The

late Mr. Gaines, finding he was so surrounded with new buildings that specimens could not be successfully grown for exhibition, turned his attention to cultivate almost entirely for market. Thus we found the class of plants very different to what we should have seen sixteen years since.—E. BENNETT, *Osberton*.

NEW BOOK.

A Practical Treatise on the Cultivation of the Grape Vine. By William Thomson, Gardener to his Grace the Duke of Buccleuch, Dalkeith Park. Third Edition. Blackwood & Sons, Edinburgh and London.

It is sufficient to say of this admirable work that it has already reached a third edition, and in this edition the author has made such alterations and additions as another season has added to his already large stock of experience.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

ALOCASIA LOWII (Mr. Low's *Alocasia*).—*Nat. ord.*, Aroidæ. *Linn.*, Monoclea Monandria. Introduced from Borneo by Messrs. Low & Son, Clapton Nursery. Flowered in a stove during January. Chiefly decorative by its strikingly white ribbed leaves, rendering it "unquestionably one of the most desirable of the *Alocasias* for cultivation."—(*Botanical Mag.*, t. 5376.)

SAXIFRAGA FORTUNEI (Mr. Fortune's Saxifrage).—Introduced from Japan by Mr. Fortune, and cultivated at Mr. Standish's Nursery, Bagshot. Flowers white.—(*Ibid.*, t. 5377.)

HEMANTHUS NATALENSIS (Natal *Hemanthus*).—*Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia. "A charming greenhouse plant," discovered by the late Dr. Pappe, at Natal, and blossoming in the Cape-bulb house at Kew in February. Bracts rich crimson-purple; stamens and styles bright orange, sheathing scales beautifully coloured and dotted with crimson.—(*Ibid.*, t. 5378.)

SCILLA NATALENSIS (Natal Squill).—*Nat. ord.*, Liliaceæ. *Linn.*, Hexandria Monogynia. Introduced by M. Van Houtte, from Natal. Pedicels of the same soft pale blue as the corollas.—(*Ibid.*, t. 5379.)

HETEROTROPA PARVIFLORA (Small-flowered Heterotrope).—*Nat. ord.*, Aristolochiæ. *Linn.*, Gynandria Dodecandria. Sent from Japan by H. E. Hoey, Esq. Flowers purple edged with green. Leaves dark green, marbled in the centre with a lighter green.—(*Ibid.*, t. 5380.)

IMANTOPHYLLUM MINIATUM (Orange-coloured Imantophyllum).—*Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia. Sent to this country from Natal by Mr. J. Backhouse, of York. Flowers orange, but white and lemon-coloured inside at the base. Desirable and easily cultivated.—(*Floral Magazine*, pl. 145.)

ROSE, FRANÇOIS LACHARME.—A French-raised flower introduced by Mr. Turner, Slough Nursery. "One of the finest flowers of last year," being "a dark Jules Margottin."—(*Ibid.*, pl. 146.)

CAMELLIA, DUCHESSE DE BEERI.—"Certainly the finest of the white Camellias grown."—(*Ibid.*, pl. 147.)

PELARGONIUMS.—Seedlings raised at Clewer Manor. *Improvement*, lower petals rich purple; upper petals maroon-blotched with purple margin. *Censor*, crimson purple. *Souvenir* has "richly-painted crimson and black lower petals, black top and bright margin."—(*Ibid.*, pl. 148.)

DELPHINIUM ALOPECUROIDES.—A double variety of Larkspur, raised by Mr. Wheeler, of Warminster, who "called it *alopeuroides*, doubtless from the close brush-like form of the principal part of the spike." It is very hardy, and propagated by division, as it never produces seed.—(*Florist and Pomologist*, ii., 57.)

PEAR, NOUVELLE FULVIE.—"Admirably portrayed by Mrs. Dix." It was raised by M. Grégoire, of Jodoigne. A melting, finely perfumed, and richly flavoured Pear. Ripe in January and February.—(*Ibid.*, 64.)

FOUNTAINS.

By H. NOEL HUMPHREYS, ESQ.

THE most highly wrought effects produced in garden architecture have been those effected by means of fountains; of this,

the well-known gardenesque waterworks of Versailles and St. Cloud are sufficient evidence.

Sir Uvedale Price says:—"With respect to fountains and statues, as they are among the most refined of all garden ornaments, so are they the most liable to be introduced with impropriety. The effect, however (especially that of water mixed with sculpture), is of the most brilliant kind. Some have asserted that fountains are unnatural; but natural *jets d'eau*, though rare, do exist, and are among the most surprising exhibitions of nature, which, in Iceland and other volcanic regions, have struck the traveller with wonder.

But though we find natural fountains in the wildest scenes of nature, it is not, however, necessary, in making artistic use of a natural law that produces a *jet d'eau*, to surround the artificial jet with the circumstances that surround it in nature, any more than it is necessary that the architect, in building with stone, should imitate in his work the rude form of the quarry from which it was taken. On the contrary, as fountains produce the best effect near buildings, and in combination with statuary, architects and sculptors like Bernini, says Sir U. Price, would not think of inquiring what were the precise forms of natural waterpouts; but knowing that water forced into the air must necessarily assume a great variety of beautiful effects, which, added to its native clearness and brilliancy, would admirably accord with the forms and colours of statues and architecture, would use it accordingly.

Nature and art are more closely allied than appears at a first glance; for all art is founded upon the development of some natural law, which Shakespeare perceived when he makes Polixenes, in the "Winter's Tale," say

"This is an art
Which does mend nature—change it, rather: but
The art is nature's self."

Under ordinary circumstances, the scenic features that surround garden fountains are such that the impression one receives on seeing water forced into the air is, that art has been employed to produce the effect: therefore, while still water finds its more appropriate locality in the lower portion of the grounds, fountains may be more properly placed in the higher levels of a garden, as their evidently artificial character seems to find its appropriate situation in a position where water would be highly desirable and ornamental, but where it could only be brought by scientific and artistic means. Here, then, the display of art, even to a degree of ostentation, becomes legitimate; and fountains of elaborate character and complicated architectural design find their most imposing station at the extremities, or centres, of elevated terraces, and places of similar character, where the gardenesque and semi-architectural character of the surrounding scene, is all in artistic harmony with them.

Very few good fountains have been as yet constructed in England; the two in Trafalgar Square—which our national *Charivari* (*Punch*), very aptly and cleverly compared to "two saucers surmounted by a bottle of ginger beer"—being signal failures; and the one erected at Brighton, though on a more ambitious scale, almost equally unsuccessful. Into the region of "art," in the treatment of fountains, we have not yet penetrated; but in simpler forms of fountains—that of a simple jet issuing at once from the level of the main water—greater success has been attained, as mere "dimension" is the great quality in this unadorned natural effect. The scale is, in fact, everything; and so far, the jet at Chatsworth is highly successful—indeed, magnificent; but all the other attempts at fountain-work, all the minor squintings, including the two celebrated "water-trees," are beneath notice; and still more worthless, in point of art, are all the fantastic failures called fountains at Alton Towers.

Modern Italy is the classic land of fountains. Long before Le Notre and his cotemporaries and collaborateurs constructed the celebrated waterworks of Versailles, the magnificent fountains of the Villa d'Este, and those of the Villa Aldobrandini, were well known and justly celebrated works, especially the building called the "Saloon of the Winds," where water is made to produce rushing sounds characteristic of the four winds, the personifying deities of which form sculptural groups, among which the play of waters has a very grand effect. Still more elaborate is the work of Giacomo della Porta, the celebrated Mount Parnassus, with the deities playing on different musical instruments, the sounds of which are imitated by the water in a manner, which, if not entirely successful, is yet sufficiently approaching the desired effect to be very astonishing. These wonders of the villas of the Sabine Hills, in the region of Tivoli and Frascati,

are, however, among the over-wrought effects of hydraulic science and art. More simple, and more artistically grand, are some of the fountains of Rome; that, for instance, which introduces the *acqua Paola* to Rome—a supply named after Pope Paul V., the founder of the Borghesi family, who repaired one of the ancient aqueducts, and so united a magnificent stream of water once more to Rome, after centuries of severation, in consequence of ruinous portions of the aqueduct allowing the stream to waste itself uselessly on the Campagna. To usher this restored supply of the precious element into the “Eternal City” with due “pomp and circumstance,” a magnificent architectural composition was erected on the slope of the Janiculan Hill, between the columns of which three grandly designed apertures appear, from which three torrents, for no other term will sufficiently express the bulk of water—fall with a deafening sound, amid a cloud

of spray, into three gigantic *tazze*, from which conduits carry the water to supply many of the greater, and an endless number of the lesser fountains of Rome. The fountains on the Piazza San’ Pietro are, perhaps, the finest detached specimens of purely decorative fountains in existence. They are the work of

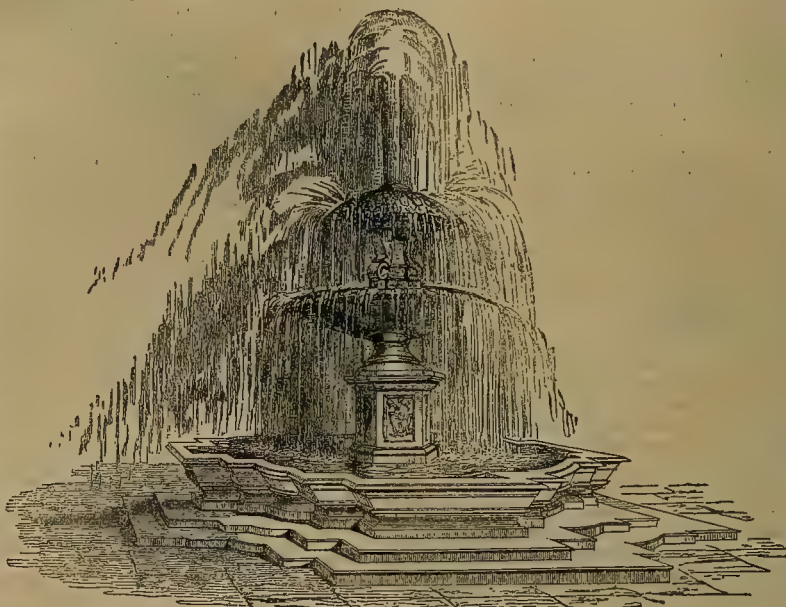
and imposing. These, with the great fountain of Trevi, have afforded Madame de Staël subject for some of her most eloquent, descriptive passages in her admirable novel, “*Corinne, ou l’Italie*.”

No. 1 is a small, and, of course, inadequate representation of one of the fountains of St. Peter’s. No. 2, that of Palazzo Farnese; and No. 3, another grand and simple example of the fountains of Rome—that of the Court of the Belvidere.

In these fountains the abundance of water always forms the grandest feature—a mere squirt is but a caricature in comparison, for, to cite a passage recently quoted by Emerson in his “*Representative Men*,” “A single drop of seawater possesses all the chemical properties of the great ocean of which it is a part, but it is incapable of representing the phenomenon of a

storm.” Thus we see that magnitude must inevitably form a great element in the sublime, and that dimension, as well as design, are points to be considered in the construction of objects intended to produce a certain effect of grandeur.

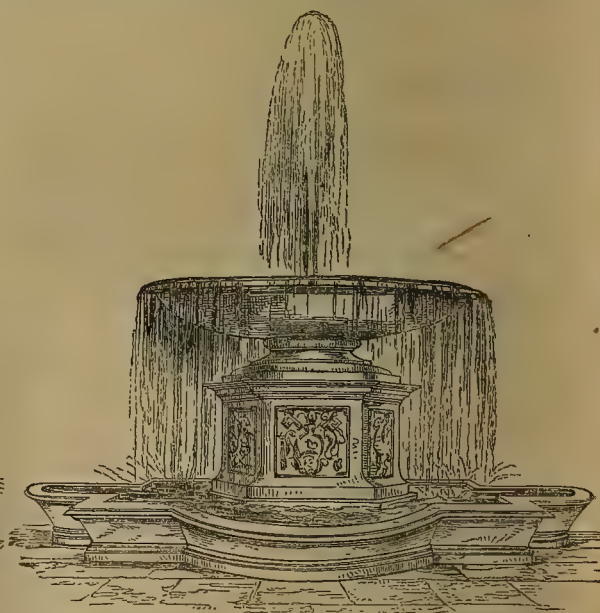
In places, however, where an enormous supply of water would



No. 1.—The Fountain of St. Peter’s.



No. 2.—Fountains of the Palazzo Farnese.



No. 3.—Fountain of the Vatican, in the Court of the Belvidere.

Carlo Maderno; and such is the magnificent character of this simple design—the quantity of water thrown up, and falling in clouds of spray, in which, at a certain hour, one or more rainbows are distinctly seen—that, even immediately in front of St. Peter’s, one of the largest and most imposing buildings in the world, their effect so far from being insignificant, is most grand

and imposing. These, with the great fountain of Trevi, have afforded Madame de Staël subject for some of her most eloquent, descriptive passages in her admirable novel, “*Corinne, ou l’Italie*.”

possible form being the one in which the action of the fountain should be commonly seen.

My examples from the fountains of Rome have not been selected to exhibit the vast scale and magnificence of the greatest of those works, many of which occupy great space; being, in fact, complicated sculptural tableaux, in which a great number

of statues are required to complete the composition. I have rather selected such examples as might be applicable to practical purposes.

“ — dans l'air s'enflammant au feu d'un soleil pur,
Pleuvor en gouttes d'or, d'émeraude, et d'azur.”
—(Gardeners' Mag. of Bot.) DELILLE, “Les Jardins.”

PHILODENDRON SIMSII.

Nat. ord., Araceæ, ? Caladiææ. Linn., Monœcia Triandria.

GENERIC CHARACTER.—*PHILODENDRON*, Schott.—Spathe convolute at the base, straight, closed after flowering. Spadix continuously androgynous; rudimentary reproductive organs below the stamens; no sterile appendix. Anthers two-celled, distinct, 2-7, placed back to back in areolæ; the cells hidden within the connective, open at the apex. Ovaries many, crowded, free, 5-15 celled. Ovules several, ascending from the central angle of the cells, orthotropous; style very short or wanting; stigma capitate, truncate, or with imperfect radiating lobes. Berries distinct, many-seeded.—(Endl. Gen. Plant.)

P. SIMSII.—*Kunth*.—Caulicent; rooting; leaves shining cordate-sagittate, acute; petioles roundish, slightly flattened on the upper side; spadix slightly contracted below the middle, then tapering gradually to a point; spathe cylindrically hood-shaped above, constricted in the middle, inflated below, a little longer than the spadix.

SYNONYMY.—*Philodendron Simsii*.—*Kunth*, *Enumeratio Plant.*, iii., 48. —*Caladifolium*, Sims, in *Bot. Mag.*, t. 2643 (not of Jacquin). *C. Simsii*, *Hooker*, in *Bot. Mag.*, p. 3345.



DESCRIPTION.—A fine stove perennial. Rhizome elongated into a stem, rooting. Leaves cordate-sagittate, very large, the blade 2 feet long, shining; petiole roundish, more and more flattened on the upper side upwards, elongated (30 inches), closely marked with fine, deep-green, interrupted streaks; petiolar sheath very short. Spadix about 8 inches long, cylindrically hood-shaped, convolute at the base, contracted in the middle, and attenuated above into a fine point, white, and marked about 2 inches below the contracted portion with an oblique crimson band, shaded off above and below. Spadix nearly as long as the spathe, thickened below, slightly contracted below the middle, and tapering gradually up to the rather acute point; the first inch from the base occupied by the numerous distinct ovaries, the remainder presenting a smooth surface, with reticular lines indicating the boundaries of the groups of sterile and fertile stamens. Rudimentary staminal groups below the fertile. Stamens consisting of distinct sessile, two-celled anthers, arranged 2-7 in a polygonal group, back to back, in close contact, the cells of the anthers concealed within the connective, opening at the apex. Ovaries numerous, crowded, but free, conical, many-celled; styles almost none; stigmas capitate,

flattened on the summit, and with slightly marked radiating lobes. Ovules numerous, orthotropous, ascending from the internal angle of the cells. Berries?

HISTORY.—This plant is a native of Demerara, and is not new to our gardens. It was figured by Sims in the “Botanical Magazine,” under the name of *Caladium grandifolium*; Sir W. J. Hooker subsequently showed, in the same work, that it was not the *Arum grandifolium* of Jacquin, and named it *C. Simsii*. It belongs to the genus *Philodendron* of Schott, under which name it is included in Kunth’s “Enumeratio.” Its large, glossy, deep-green leaves, and broad crimson band in the white spathe, give it a striking appearance.—A. H.

CULTURE.—The *Philodendron* figured in our plate is a free-growing stove plant. It should be potted in rough, porous compost; and, from its large size, requires a large pot, which must be well drained. The old stems push out roots, which hang about the pot without striking into the soil, and, no doubt, contribute, like the aerial roots of Orchids, to the support of the plant. It is increased by separating the shoots which, from time to time, branch out from the old stem. The species is more curious than ornamental.—(Gardeners' Mag. of Botany.)

FRUIT TREES IN POTS.

THE subject of growing fruit trees in pots, which has been so freely discussed in the columns of THE JOURNAL OF HORTICULTURE, must, if not very instructive, have certainly proved very amusing to most of your readers. The subject I confess is interesting to me, as I have had under my care for the last few years a collection of upwards of three hundred fruit trees in pots, consisting of Peaches, Nectarines, Apricots, Plums, Cherries, and Figs.

I believe I may say that I am considered to have been tolerably successful in the cultivation of them. This season most of the trees are covered with fruit; and although some of them are not so, yet all are healthy, perfectly clean, and well-formed trees. Visitors call them magnificent trees, but visitors will sometimes be complimentary. My employers appear to like them, and I rather like them myself, and of course, I consider myself in duty bound to do all I can to cultivate them successfully; but at the same time, from what I have already said, it may be supposed that, in my own homely way, I may have come to some conclusions upon the subject. I admit that I have done so, and in as few words as possible I will state them.

I am convinced that good fruit may be and has been obtained from trees growing in pots; and I am also convinced that better fruit may be and has been obtained from trees planted out and trained in the usual way, and if time and labour be reckoned as money (which they ought to be), the fruit from trees planted out is obtained at least 100 per cent. cheaper.

I admit that a fruit tree in full bearing and growing in a flower-pot is a curious and very interesting object, and so are Mushrooms growing in flower-pots. I have seen the surface of some two or three dozen nine-inch pots completely covered with snow-white Mushrooms arranged on the floor of a dark cellar—a sight I can assure your readers worth lighting a candle to look at.—G.

[We have omitted the last paragraph in your note because, on second thoughts, we are sure you will agree with us that a mode of culture so interesting, even if not profitable, does not deserve ridicule. You have alluded to one fact on which you would oblige us by more information—growing Mushrooms in pots. We had heard of this being done, and should be glad to know more of the mode of culture pursued.—EDS. J. OF H.]

METEOROLOGICAL NOTES.

"WHAT a remarkably fine season!" is an observation we hear on all sides. Fruit trees are laden with blossom in one place; and in another we hear of it being set and the young crop swelling with unusual rapidity. There is no doubt, however, that we shall hear complaints by-and-by; and even now, in the beginning of May, the weather is too fine for some.

On all sides we hear of its being a very dry spring. Water is said to be scarce and the ground dry and hard. Three months ago the story was what a bad season it has been, so accustomed are we to run to extremes. However, taking it for granted that the early winter months were wet, they were not more so than is usual at that time; but the last three months have been unusually dry—drier than any similar period I have any record of, excepting the spring of 1853, when the rainfall was less for the winter six months than it has been this year. This will be seen by the following table, which exhibits the rainfall in inches for the winter season mentioned, commencing with the 1st of November and ending with the last day in April, as compared with the rainfall for the corresponding six months for the last eight years:—

Winter of 1855-56	rainfall, 12.40 inches.
" 1856-57	" 10.72 "
" 1857-58	" 6.93 "
" 1858-59	" 9.01 "
" 1859-60	" 17.21 "
" 1860-61	" 10.68 "
" 1861-62	" 16.32 "
" 1862-63	" 7.95 "

The wettest month during the above period was November, 1861, when 6.10 inches of rain fell; the driest was February, 1857, when only 0.27 of rain fell. Nevertheless, singular as it may appear, and probably at variance with the popular notions of long droughts and long wet periods, I have no record in the years above given of there ever having been more than fourteen consecutive days without any rain, while seventeen consecutive wet days without a dry one is the longest period of an opposite

character. I need hardly say that small, almost inappreciable quantities of rain sometimes divide long periods of dry weather, so as to leave no greater number of days without rain than is given above. Even in the month that is past, though an unusually dry one, less than three-quarters of an inch of rain falling, that was distributed over ten days, being the 4th, 7th, 8th, 11th, 12th, 16th, 22nd, 28th, 29th, and 30th.

With regard to the progress made by vegetation, the present season may be justly regarded as an early one up to the end of April, but a period of dull and cold weather will easily reduce it to the level of ordinary seasons. With me some Apple blossom was out on the 16th April, being three days later than it was in 1859; but, in general, vegetation was certainly farther advanced at the end of that month this year than it was at the same time in 1859. Asparagus, however, has been earlier in years gone by than it is this season; and, on the other hand, the fine weather sent that harbinger of spring, the cuckoo, amongst us earlier than I ever knew it. I heard it several times on the 13th, and some assert it to have been heard the day before. The other tokens of spring I need not go into, as it is with regard to the amount of rainfall that I beg to call the attention of your readers. I confess I look with some degree of alarm to the probability of wells, ponds, streams, and other sources of supply being exhausted before summer is over. Whether this may prove to be the case or not remains to be seen; certainly if these reservoirs depend on the winter's rain to feed them for this summer's work, there is much reason to fear that a deficiency will follow.

In regard to the absence of all sharp frosts, the past winter has also shown us that some of our ideas were erroneous about the tillage and pulverisation of the soil, for in many instances where the ground was dug up in time and received the benefit of the dry weather in February and March, it works pretty well—better than it sometimes does after frost when the latter is followed by a season of wet weather. Of the well-doing or otherwise of crops it is premature to speak; but at present all is hope, and in many instances the promises are flattering.

J. ROBSON.

BARBADOES POTATO.

It does not appear that this Potato has been grown to any extent for the last seventeen years. For some years before this period it was considered in this neighbourhood the finest sort in existence, one Potato being sufficient for a dish. I have made inquiries in all directions. From one quarter I was informed that 10s. were offered for a tuber. There are no knobs on the Barbadoes Potato, as stated by "Q. Q.," to exist in the varieties he mentions, and it has but very few eyes. It is an early sort, and the haulm, although branching, is not very tall. Many thanks to those who have endeavoured to throw some light upon this subject.—A. CONSTANT READER.

WHAT ARE GOOD MANNERS IN VISITING A FRIEND'S GARDEN?

I HAVE a neighbour who comes to see me several times a-year, and whose visits I have hardly grace enough to endure. He has a smattering of horticultural knowledge, and he owns a country place, which he thinks is the very pink of perfection. "Now, I want you to go around and show me your grounds." Well, while I am trying to do so, he struts loftily, and talks about his own establishment, his English gardener, and his fast horses. Am I pointing out a fine specimen of the European or Siberian Silver Fir, he breaks in, "Oh, yes, I've several like them, only bigger; the pedlar of whom I got mine said they called them Balsams down in the swamp." Show him a Delaware or Rebecca Grape, and he will admit they are tolerably good, but smaller and less fragrant than the Charter Oak and Northern Muscadine. A Japan Lily is passable, but then he has several other kinds, yellow, red, and white, lots of them! And so he runs on about his arbours, and his terraces, and his serpentine walks, and his statues of Venus and Neptune, and much other gimcrackery with which his pretentious place abounds. When he has sufficiently disparaged my place, and lauded his own, he goes home. I pray you, Mr. Editor, nappen this way some time, and bring him down from his high horse.

A friend of mine, who is a fond planter of trees, has also a thorn in his flesh. It is a lady! She looketh not well to the

ways of her household, but, neglecting her children, goeth about to talk of cats, dogs, horses, and flowers. Her mind is good, so far as it goes, but its scope is not wide. When she visits my friend, she never notices the rare trees which are his joy and pride, nor the velvet lawn, nor the antique vases, nor the fine outlooks into the surrounding scenery, which he has opened with so much artistic skill; but she begins at once to harrass him with talk about some petty detail, generally of her own experience. Now she chatters away about sowing flower-seeds, then how to cure a sick cat, how to strike cuttings, how to poultice a felon, how to save seeds; and she dwells on each point with a minuteness and long repetition, that—that “beats the Dutch.” And all this sort of talk while walking through one of the finest gardens in all this region of country! She finishes up each visit by begging a few cuttings and a few seeds, and then, with a curtsy and a bewitching smile, bids adieu.

The question now returns Mr. Editor, which is the proper way to make a horticultural visit? It strikes me I should not make it an occasion for disparaging my friend's garden and extolling my own. It is not best to waste his time, and tax his patience, by chattering away about some trivial details, or such matters as can just as well be discussed elsewhere. I should leave my garden at home when I go to visit him. Instead of pulling at his button-hole, and engrossing the time with my sage observations, I should listen to him, in a receptive state of mind, desirous to see and learn, and enjoy all I can; and, when my visit is ended, I should thank him for the pleasure he has afforded me.

And, sir, I gladly testify that I do receive such visits now and then. Some persons show at once that they appreciate what they see; instead of criticising, or making invidious comparisons, they heartily admire, and express their pleasure without stint. Others walk along more quietly, confessing their ignorance of gardening in its higher forms, but begging me to tell them the name of this and that, and the origin of the other; and they receive all that they see and hear with evident satisfaction. It is a great pleasure to receive such guests.

And, now that we are on this subject, let me add a few words more on another branch of it. The middle of the day is not a desirable time for visiting gardens; for then the light falls vertically, and the shadows of trees and shrubs are almost imperceptible. If, too, it is midsummer, the heat of noon is so intense that the visitor puffs and sweats, and feels that he is pursuing enjoyment under difficulties. Half the poetry of a garden is lost by viewing it under a broiling sun. Go, rather, in the morning, when the dew is sparkling on tree and grass, and when the birds are musical; or, go at evening, when the shadows fall aslant, when the heat has abated, and the cool air is fragrant.

[You have hit upon a suggestive theme, and painted it in life-like colours. We are sorry to say that just such ill-bred persons do own country places; but how painfully plain it is that they were not educated for them, that they are strangely out of place, that neither is fitted for the other any more than jewels are fitted to adorn animated pork. Oh that these men would learn the wisdom of silence! Few things are more painfully annoying than a visit from a man full of pompous pretension: he will neither enjoy anything himself, nor let you. No matter how well grown or beautiful your plants may be, he always has something better at home: no word of praise or commendation ever escapes his lips, be it ever so well deserved. He runs his round of stereotyped depreciation, departs, and you feel as if you had been relieved of some hateful nightmare. We can remember with satisfaction more than once having knocked the stilts from under such men, and precipitated them to their proper level. We never fail to do it when we can; for a man has no right, moral or otherwise, to be unamiable at his friend's house. The world is no better for such men, but quite the reverse. We would reason thus with them: When you enter a friend's garden do try and leave at the gate all egotism and selfishness, and resolve to please and be pleased. Remember with how much care your friend has collected the plants about him, and how much enjoyment he finds in them. Remember that they are all beautiful, some more, some less: this you cannot help feeling, though you may not acknowledge it. Remember, above all, that they are the handiwork of Infinite Goodness, and speak not contemptuously of them, even to heighten the praises of your own. If you want to hear your own plants praised, ask your friend to come and see them; and if he is barely a sensible man, with a heart alive to the propeties of life, and a nice appreciation of the beauties of nature, you will hear enough to make a reason-

able and modest man content; for how much better it is that another should praise us than that we should praise ourselves.

Having disposed of the man, what shall we do with the woman? We fear we shall have to put on a pair of soft kid gloves. The treatment in this case must be gentle and soothing. When she begins to talk about cats and dogs, tell her, as she seems to be so very fond of them, you will send her a good litter, which you must forthwith do. Send a fresh litter every time she broaches the subject, and in time she will take the hint, and carefully avoid the mention of cats and dogs in your presence. In like manner treat other inapposite subjects—for instance, when she talks about a poultice for a felon, say to her, “Well, well; but is that poultice good for the Black Knot?” You will be able to manage her in this way. Fortunately, there are only about three such women in the world; and the rest of them are such dear delightful creatures, and love flowers so fondly, flitting about among them like butterflies, sucking sweets from each, that you can well afford to bear with the three that are full of cats, and dogs, and felons, and what not.

You have a just and proper conception of what a horticultural visit ought to be. When we make such visits, we go for the purpose of learning and enjoyment, and to make our friends as happy as may be. Horticultural intercourse often is, and always might be made, a source of the purest enjoyment. There is something in horticulture that tends strongly to develope and expand man's social qualities; the only drawbacks to this are the selfishness and egotism of unregenerate human nature. What a delightful thing it is to receive a visit from one who knows the full value and beauty of your plants, and has the manliness to say so. We see you understand this perfectly. You are altogether right in regard to the best time to visit the garden. It is surprising how few think of this, and yet a whole chapter might be written about it.]—(*American Horticulturist*.)

GARDEN HELPS.

ALTHOUGH on various late occasions I have perused with great interest the numerous contributions respecting “garden helps” inserted in your valued periodical, I purposely abstained from remitting my present communication until now, because the period of the year is closely approaching when young birds of the kind desired will be easily procurable at a very moderate cost; and again I fancied a word in season the most appropriate to insure a trial among those of your readers who feel interested in such matters. Permit me to preface my remarks by stating that a walled garden is indispensable, otherwise, most probably, disappointment will ensue.

When I recall the incidents connected with the great variety of “pets” kept many years back by my late sister and self, and in respect to which it was difficult to determine which of the two felt the deeper interest in those hobbies, I believe our tame lapwings afforded us the greatest amount of pleasure and benefit, and for some six or seven years they prospered exceedingly. Our birds at the outset were casually brought to us by a country friend, and, if memory is not defective, were five in number. It is sufficient for present purposes to say that two males and a female were reared to maturity. When we first received them they were only partially feathered, but were strong healthy birds. We then fed them on the large dew-worms, expressly collected for their use, and, to increase the supply of food at the least amount of personal exertion, small strips of raw lean beef were added, although they gave a decided preference to the living worms. In a fortnight or so we turned them altogether on their own resources in the garden, and they still thrive even more so than previously—in fact, they received no particular care or attention; but it is justice to say that the quantity of snails, worms, in fact insects of every kind, they daily devoured was beyond credence.

The benefit to the damp garden we at that time occupied was of course commensurate; for, after their introduction, the crops never suffered as previously from the “slugs,” through the ravages of which our gardener said, “it was impossible to grow anything;” consequently, he at length acknowledged them as some of “his best friends,” though at the first sadly averse to their introduction. A point of considerable importance is that they never interfered, to the best of my knowledge, with any crop whatever; and taking into consideration the fact that they fed almost exclusively on insects and worms, the excrement was not as offensive to the eye as would be anticipated—so much so,

that had the premises been larger, my opinion is it would have been scarcely noticeable. They moulted into adult feather at autumn, and then became as brilliant in plumage as the lapwing when enjoying its perfect liberty. Of course they had been long previously carefully pinioned, and the outer gates of the garden had been so arranged as to close instantly after all comers.

It will be seen the difficulty of rearing was trivial, and thus some of the most beautiful and interesting objects connected with the garden were obtained with little forethought or trouble, and at an expense not worth even the mention. As winter approached we found, however, that we were compelled to find additional nutriment, particularly during frosty weather; and, to compensate for this deficiency of natural food, bread-crumbs, chopped cheese, with eggs boiled hard, served every purpose. At spring the two males were no longer sociable, and at length carried their animosity to such a point as compelled us to give the one to a friend. Strange to say, at once it proved equally tame with him as with ourselves who reared it. This particular bird fell a prey to a large tom cat, to the great annoyance of its owner, who saw the bird killed. He told me a week afterwards, somewhat gloating, the death of his bird caused Mrs. —'s cat to "evaporate." From what cause evaporation ensued others must determine. With ourselves the pair of remaining green plovers became wondrously familiar, so much so that in the depth of winter they would come and stretch themselves on the kitchen hearth, first obstinately driving both dogs and cats from thence, as we always checked resistance on their part. In general the lapwings passed us without any recognition whatever, and it was only when warmth was desirable and the cats seemed disinclined to be aroused whilst enjoying their customary nap that any interference of our servants was required.

But to revert to summer time. None but a close observer of the habits of these birds could imagine the amount of insectile food they consume, nor would accredit the careful manner in which they quarter every nook and cranny within their range. On grass plots they are at once most beautiful and advantageous; it is there, perhaps, they appear to greatest advantage, though, I believe, their utility is even still greater on the ground subjected to spade culture. Plovers will, particularly at eventide, stand perfectly motionless, awaiting the first glimpse of any loabworm, as it appears partially exposed on the surface. They then, with a few hurried and stealthy paces, approach within reach, seize it greedily, and rarely fail to drag it out at the first effort; but occasionally I have seen them first pull very carefully to prevent the worm breaking in pieces by the unusual strain, and then put the foot on the part extracted to permit the opportunity of taking a second and firmer hold with the bill, so that eventually the worm has been withdrawn entire. To any of your readers conversant with the tenacity of hold exercised by the dew-worm, if an attempt is made to withdraw it with the fingers, the force requisite on the part of a bird so small as a plover to remove it thus forcibly may be easily imagined. But I have seen the bodily strength of our favourites so severely tested that after pulling for a minute or more only a half of their prey was secured. The "peewit," as the plover is frequently called, is not only one of the most graceful and brilliant-plumaged, but also one of the most extraordinary birds in its gait of any of our British birds. Their quick motions and the elegant appendage of crest render them novel to the eye, and every motion of the bird is strongly portrayed. They must be supplied with shallow water to wash themselves—a habit they daily indulge in. We reared others with equal kindness, and they became equally familiar, though they were mostly impatient of strangers; but even this peculiarity was an advantage when understood, as, by their repeated cries, they never failed to draw attention when encroached upon, however protracted the interference, during night or daytime, though becoming at once silent and satisfied when either myself or sister spoke to them.

Although one particular pair remained with us more than half a dozen years, these birds never evinced any propensity to nesting; for it is certain they never laid at all, or their eggs would have been met with.

From the lightness of the plovers themselves, and the slight construction of their feet, they never did damage by overrunning the growing crops; and I confidently believe that any one taking the trouble to raise a pair for his own purposes will agree with me it is not a trouble thrown away; nor would I have extended my remarks to the particulars I have done had I not wished that every attempt to rear them that may ensue from reading our method of management may insure success to the less

experienced. I will merely repeat the present is about the time of year when young plovers are procurable.—EDWARD HEWITT, *Sparkbrook, Birmingham.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE weather is now favourable for carrying on the various operations of planting and sowing. Where any main crops in the kitchen garden have failed more seed should be immediately sown; where they have partially failed, procure plants, if possible, to fill up. Now is the time to destroy slugs late at night and early in the morning; they have their hiding-places, and may be destroyed by thousands with quicklime, which should be strewn over every part of the garden several nights or mornings running. It should be done in the morning by three or four o'clock, and at night not before nine. By persevering a short time a garden may be entirely cleared of this pest. *Beet*, thin the plants to a foot apart while they are small; fill up vacancies with those drawn out, they will produce plants equally good with the others. If the first crop has altogether failed it is not yet too late to sow another. *Broccoli*, make another sowing of both early and late sorts, the former to come in in October and November, and the latter late in the spring. *Cabbage*, earth-up those that were planted early in the spring; tie-up the leaves of a few of the most forward of the autumn-planted, to cause them to form hearts for early use. *Celery*, continue to prick-out seedling plants. In planting-out a second time, before finally transplanting into trenches, make a bed of equal parts of rotten dung and loam, about 4 inches thick, on a piece of hard ground, so that at the time of planting the whole of the earth and dung may adhere to the roots after the trowel is passed between each of the plants. A few trenches should now be got ready for the earliest *Celery*. On soils with a wet bottom the trenches should not be made too deep, so that the plants may be nearly on a level with the surface of the ground; a dry bottom with deeper soil may have deeper trenches: in either case, give the rows a good width because the *Celery* should never be earthed-up until it has nearly attained a size fit for use, and, therefore, the intervening spaces may be cropped with Lettuces, Early Dwarf Cabbages, and Cauliflowers, all of which would come off before the final earthing. *Cucumbers*, the ridge recommended last week will now be in a proper state to receive the plants, let them be got in without delay, and shade the glasses for a few days. At the same time a few glasses may be sown with seeds of Vegetable Marrows and Cucumbers for succession and for Gherkins; for the latter purpose on warm soils seeds sown in the open border will suffice; but on colder soils it is better to forward them in pots, and have a sloping bank thrown up facing the south; plant them near the top, and train the vines downwards, stopping them occasionally. *Dwarf Kidney Beans*, plant-out those that were sown in pots or boxes in rows 2 feet apart on a warm border. Another sowing should also be made. *Leeks*, make a sowing, to plant-out for winter use. *Peas*, stop the early crops as soon as the first blossoms are well set. *Parsnips*, they require to be thinned to 9 inches or more apart if the ground is rich. *Tomatoes*, plant them out in light compost under a south wall, also Chilies, Capsicums, and Basils, in doing which, if they are at all pot-bound, let the roots be gently loosened and spread out.

FLOWER GARDEN.

Push forward late propagated stock, and endeavour to keep the whole healthy and growing slowly in the pots. It is a common but erroneous practice to allow bedding stock to remain in very small pots, exposed to the sun and wind and very scantily supplied with water until it is almost dried up, and such plants are considered to be hardened-off. They should be exposed to the weather as freely as circumstances will admit, but never to such an extent as to brown the foliage and dry-up the tissues. Now is the time to establish a firm and even sward or lawn. The roller and scythe will be in frequent request, and much labour is involved in these operations properly carried out. See that the edgings hitherto neglected are put in order for the summer; do not edge beyond the original boundary, and keep the walks filled with gravel. Let the roller be passed frequently along the edges in order to level them down to the walk, this takes away the harshness of the outline.

FRUIT GARDEN.

During the process of nailing-in the shoots of Peaches, Nectarines, and Apricots examine if there are any nails so placed as to

be likely to injure the swelling fruit, and remove them. Use strong cloth shreds cut to a sufficient length to allow plenty of room for the wood to swell; such short shreds are sometimes used and bound close round the wood, so that at the winter pruning many of the shoots will be found to have an indented ring, and very often a large piece of gum. Vines will now require constant attention in stopping and nailing-in. See that the red spider does not get a-head on wall trees, nor the caterpillar on Gooseberry bushes.

STOVE.

All here is growth, treat them, therefore, liberally both at root and branch. Keep a brisk growing temperature, with plenty of air. Take care to pot such things as require it in time. *Stephanotis*, *Gloriosa*, *Allamanda*, *Dipladenia*, and other climbers will now be showing bloom; keep the branches from becoming entangled, but there should be no hurry to train them until the flower-buds are of a good size.

GREENHOUSE AND CONSERVATORY.

Look well after young stock, especially that for the ensuing winter's work. The early-sown Chinese Primroses and *Cinerarias* should receive frequent and careful attention, these will bloom in October and November. Another sowing may be made shortly for spring decoration. Continue successions of *Achimenes*, &c., from the rest stock. The *Chrysanthemum* cuttings may be put out immediately; these will do without bottom heat. Choose the short-jointed wood, they will strike freely under a hand-light, to be shaded from the sun. *Achimenes* to be placed in either of these structures when more air can be given; stake out neatly as the shoots advance. *Gloxinias*, like the above, require a partially-shaded situation and moist heat. *Gesneras* may be treated in the same way, with the addition of more light. *Amaryllis*, &c., to be removed to the conservatory for blooming, where they are a great acquisition. Although a slight shade is necessary on the forenoons of bright days, this must be used sparingly when the weather is unsettled; for without abundance of light flowers never colour properly, and they soon fade if kept in too shady a position. Where it can be conveniently accomplished watering should be done in the morning, in order to dry up the superfluous moisture before evening so as to avoid night-damps. The New Holland twiners, when done flowering, to have their shoots well trimmed-in before growth commences.

W. KEANE.

DOINGS OF THE LAST WEEK.

It is rather tantalising to hear from different parts of the country of the fine rains that came just when they were wanted. Now, on this, the 7th of May, we have yet had no rain, though several times we were sure it was falling some miles away. In these circumstances, as we depend almost entirely on rain water, we have had to be very careful in watering, and could not give some things anything like the quantity they ought to have had. Many crops we have even partially shaded to prevent the ground getting too dry; and among many of them we stirred the surface to keep it loose, and from cracking, and thus prevented the heat entering, which would have been acceptable enough but for the dryness from evaporation that would have accompanied it. With this dryness there have been several rather sharp frosts, which did little damage, as the air was so still and dry. Having seen no bad effects, we began to be rather too secure, and were partially caught on the morning of this day week, the frost having blackened the Potatoes, and injured very heavy crops of Gooseberries, and they would have been more injured still but for the thickness of the foliage. All the fruit that were at all exposed were blistered at least on one side. A little rough hay shaken along the rows of the Potatoes, and very gently on the tops of the bushes, would have saved them nicely, and also the blooms of some early Strawberry plants on a south border. For want of it every open flower was dyed black in the centre where the fruit should come. A few *Calceolarias* covered with thin calico were also a little injured where the cloth touched them, whilst those a few inches beneath it were safe, and also some standing exposed in sheltered places. Walnuts, &c., in the neighbourhood were much injured, and, as it may be interesting to some to know, in these and other cases where trees were affected the lower branches were most injured, whilst the loftier and more perpendicular branches escaped. The why may afford occasion for thought and investigation.

Emptied a frame over a shallow hotbed that had been filled with cuttings, turned the manure over, placing fresher at the bottom, and raising the bed at the sides and ends for the frame to stand upon, leaving the space open in the centre for soil, so that the soil should be below the level of the bottom of the frame, and as the soil was soon warm enough, planted-out strong plants of Cucumbers. Our frames are generally about 18 inches at back, and 10 inches in front. When deeper they are lumbering to move about, and the advantage of a frame over a pit is, that it may be easily moved where most needed. This depth is not enough for Cucumbers, if the frame is set over the bed in the usual way; but by making a wall or ridge of sweet manure some 16 to 18 inches higher than the centre of the bed, there is plenty of space left for soil and foliage, and the bed being so much shallower in the centre than at the sides, there is little chance of the roots being burned or overheated.

Put about 15 inches of rough littery material having a little heat in a shed for a Mushroom-bed; beat and trod it firm, and covered with a couple of inches of good horse-droppings. This, after five days, has emitted a nice gentle heat of about 80°, so spawned it over in the usual way, placing pieces of the size of walnuts every 9 inches over the bed, and with the upper side just covered with manure or scarcely so. Placed an inch of horse-droppings over all, and beat firm again, and will leave the bed without earthing to see how the heat goes; as, if still very mild, we will give an inch more of droppings before earthing-up. The side of the shed being open to the west, broke the current of air there with bundles of pea-stakes. Straw-thatched hurdles may be used in the hottest time of the summer. The reason for making such a shallow bed is that we do not want to wait long for Mushrooms; and if the bed had been thicker or of better materials we must have waited longer before we could spawn and earth-up with safety. The reasons why we wish to hurry on this bed are twofold—first, because we wish the old beds in the Mushroom-house to be had for manure for flower-beds, &c.; and secondly, because we are a little doubtful of the last, and a promising bed in the Mushroom-house will do a very great deal more of good as to crops of Mushrooms.

Our good assistant in the Mushroom-house was bothered with woodlice, which he could not trap fast enough, and resolved to daub and catch them with tar. He poured it down at back and front of the bed, and there numbers of these gentry were held fast by something more impassable than birdlime. As soon as we smelt the tar we knew too well that the Mushrooms in view would die or be uneatable; and we are doubtful if those coming like pinheads will do much good, as the fumes of the tar still remain, though it was removed as carefully as possible. We might not have adverted to this fact of the tar, but for two complaints. One gentleman says that in a lean-to pit with a very white back wall he found his Cucumbers were blotted and burned, notwithstanding the air carefully given; and seeing that we recommended darkening the wall so simply as with soot paint, he thought he would improve upon it by painting the wall with tar and oil, and lo and behold! the morning afterwards, there was not a single healthy Cucumber-leaf in the house. Another gentleman has ruined a house of Melons from the same cause, and tells us he ought to have been guarded against such a fatal mistake, or why does he pay for *THE JOURNAL OF HORTICULTURE*? Well, we are very sorry for both mishaps, though we hardly think our serial is much to blame, as, again and again, the admonition has been given to be careful of using tar inside of a plant-house, and that if used at all the tar should be applied six months or more before the house was used. We prefer to act on the safe side, and never use it on the inside at all, as, if much heat is used, the fumes will be given off months after it seems to be thoroughly dry; for outside work and dried before plants are brought near it, there would be no danger. If a place were tarred inside in summer, and no plants put in until winter, they might be safe then, especially if air were left on night and day.

Watered Cauliflowers, Peas, Turnip Radishes, and Lettuces. Sowed successions, damping the soil in the drills, and shading. Pricked-out Lettuce, Basil, Savory, Chilies, Capsicums, &c. Potted Tomatoes, and staked Peas, and sowed Kidney Beans and White and Scarlet Runners.

As an evidence that our Irish compatriots receive, at least in some places, their fair share of the gifts of Providence, we may mention that a valued correspondent informs us that at a show at Wexford the other day there were good young Potatoes fit for use from the open garden; and that at the same place Peas and Broad Beans were in bloom and pod.

FRUIT GARDEN.

Regulated foreright shoots, nipped and disbudded Peach-shoots, and tied, hunted for insects, watered cherry trees, especially setting their bloom, as a few pots of water then often make much difference. We have noted how forward blooms of Strawberries were injured by the frost of the last day of the preceding month. Run the hoe through Strawberry-quarters to keep the moisture in and to prevent the ground cracking. This will enable the rain to penetrate more easily too when it comes, and a good soaking before long would just make all sure for a heavy Strawberry crop. Turned out pots of Strawberries from the houses as soon as the fruit was gathered. The crowding now is not good for the permanent crops cultivated. We will put in the later houses one more batch of plants that are now in blossom, and if there should threaten to be a hitch, we must then forward some out of doors with lights placed over them.

We have scarcely been beyond the garden walls for a long time, but we saw two long shelves of Strawberries in a span-roof house at Luton Hoo yesterday, which we think worth noting, not only for the excellence of the crops, chiefly British Queen, but more especially as the method adopted is not only very simple, but one that we have already several times recommended. The shelf cannot be simpler. A common board, perhaps, about 7 or 8 inches wide, and on this is placed a turf of about 1 inch thick, and the same width as the shelf, the grassy side being turned downwards. On this turf the pots are placed, and the roots were running into it, and one advantage is, that it is scarcely possible with common treatment to over-water the plants, and another advantage is, that the turf becomes a reservoir alike of nourishment and of moisture, whilst the latter can never be presented in such a shape as to make a morass plant of the Strawberry. There was another striking feature. As the doors were standing open the shelves on each side seemed to be adorned with drooping verdure, which gives a cool very refreshing appearance to the fruit, owing to the grass from the turf being allowed to grow on each side. Some might have preferred cutting it off, but in the situation referred to we think the grass added an attraction to the scene. Some-day we shall give an account of these new houses, meanwhile we regret that we cannot give the exact position of these shelves, as that we think has something to do with the success; but we may state from memory, that the shelf was $2\frac{1}{2}$ feet from the apex of the house, and some 15 inches from the sloping glass of the roof. We may also mention for the purpose of directing attention to the point, that in another house with sloped roof and hipped at back, a shelf was also looking well, but was evidently too near the glass when compared with the preceding one. The pots being so near the glass must have been excessively hot in very sunny days, and to neutralise the effect of that a very thin slip of wood, and nearly as deep as the pots, was slipped in between them and the sloping glass, and thus the south side of the pot would be little hotter than the north side. This shelf was too near the glass to permit of the turf being used, but Mr. Fraser proposed lowering it next season so that the plants should be further from the glass. We find that when the plants are close to the glass, though good fruits are obtained, the flower-stalks are much more stubby, and, of course, they are more liable to feel the effects of sudden changes of temperature and atmospheric moisture.

We feel much interested in the account "FRUIT-EATER" gives of his failure with Keens' Seedlings. The tiniest little plants will generally show bloom the first year. The failure of "FRUIT-EATER" is so much like the case of a merchant which we described a year or two ago, that we do not thoroughly coincide in our good Editors' idea of the barrenness not being owing to extra luxuriance. We think that over-luxuriance, too much manure, and too much rich manure-waterings in autumn, will keep on growth instead of inducing the forming of fruit-buds. Our merchant friend, a little earlier than this, was much astonished on beholding our black looks on taking us to see what people said was the most splendid bed in the neighbourhood; and so it was, if he had been content with leaves instead of fruit. We saw there would be few blooms; and we think, instead of several bushels he did not get above five or six ounces of fruit. As far as we could make out the plants were planted in the end of July. The ground was heavily manured; the plants were thoroughly watered up to the end of October with soap-suds, drainings from the dung-hill, &c., and the result as above. Part of the plants were destroyed, and others planted in the same place, which did well. Part were left, and these were kept thin in summer. Not only the runners, but even the buds were thinned; and as they stood

their ground well without the waterpail, no waterings in summer or autumn were given, and the following year there was no end of fruit-buds and flower-trusses. As a general rule, though Strawberries delight in rich feeding, they like extra supplies best in spring as the fruit is coming on, and in summer when exposed to a powerful sun; rich feeding and manure-watering in autumn, as in the above case of our merchant, are apt to do more harm than good. Perhaps a "FRUIT-EATER" may from this case gain a hint, as it is the only one we know of that so closely resembles his own. We suspect that this is also the opinion of the Editors.

One little fact more about Strawberries, which is no less a fact, though we are not learned enough to give a clear-enough outline even to please ourselves how it is so. The fact is, that Strawberries when forced moderately early, and planted-out in the open ground, will give you some nice fruit in the autumn, and an extraordinary crop the following year—such a crop as would be looked for in vain from any young plants, or even those rising two years old, if both received the same common treatment. We recollect hearing this matter talked over some twelve years ago at a festive party, which some of us will never forget, though several of the brightest spirits there have gone home since then. Among others, C. W. Johnson, Esq., well acquainted with gardening, but more distinguished as an agricultural chemist, could understand very well how a crop of a certain kind could be obtained in autumn, and could not see on what principle, after the exhaustion of two crops in one season, the plant should have such fruitful energies the following season. Well, there is a nut to crack. Many can confirm the fact from their own experience, and many can also say that these also come rather earlier than other plants, the last season's runners coming next. When we have repotted such plants, we have also had heavy crops, but we never followed that plan up much; as, though the fruit was so plentiful individually in pots, the specimens were not so fine as those obtained from young plants, though, no doubt, much might have been done by thinning freely, if time had permitted.

One fact more as to these forced plants when turned out. This fine crop the first season afterwards is all that can be urged in their favour. When ground is limited they ought not to stand after that first year. Every season they remain afterwards there will be declension and decline in quantity and quality.

ORNAMENTAL DEPARTMENT.

Much the same as last week, potting, protecting, pricking-out, stering, and shading, &c.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c."* 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

INSECTS ON MELONS (*E. Hurst*).—The insects sent are several species of small rove beetles (*Staphylinidae*), which are generally considered as feeding on other insects or on decaying vegetable matter.—W.

POLYANTHUS SPORT (*C. Daniel*).—The calyx has become leafy, and the sport probably will not be permanent.

MOWING MACHINE (*John Eolland*).—We cannot recommend one maker in preference to another; you must read the advertisements in our Journal, and select that which promises to suit you best. If kept in good order, any one of them will do what you require; but to be worked by one man we would have it narrower than you mention.

TENANT REMOVING GARDEN BUILDINGS (*Ohio*).—All buildings may be so erected as to be removable by a tenant at the end of his term; but we cannot afford space to enter into details. If the foundation is of brick, have a plate of wood fixed to it and to that plate have the superstructure attached by screws. The whole superstructure may be then removed. The boiler, pipes, &c., may be removed also.

WORK ON THE VINE (*J. M. McClellan*).—Sanders on the Vine would suit you probably. You can have it free by post from our office if you send your direction with 5s. 2d., either by a post-office order or in penny postage stamps.

TALL TREES FOR A BLIND (S. E.).—You will find it no easy task to move trees 50 feet high with the care requisite to insure their success even in autumn. You live so near to London that you had better visit some of the large nursery grounds and select for yourself. We have found, even on a chalk soil, that the White Poplar established itself the most readily, and formed a blind in summer the most speedily. We have answered another correspondent about lawn mowers.

FLOWER-GARDEN PLAN (K.).—We like your flower-garden arrangement. The mixtures will do for the borders if they please you, but we have no doubt that the plants would look best by themselves—that is, Koniga, Flower of the Day, and Manglesii, instead of mixed any way with each other. We once saw a variegated border chiefly of Geraniums, but it was a poor affair. We thought the plants wasted.

VARIOUS (Q. Q.).—*Colens Verschaffeltii* may be nipped to keep it dwarf, indoors or out of doors. We think that out of doors it will only do well in warm, sheltered places. *Gazania splendens* rather prefers stuffy loam; but we have seen it thrive in all manner of soils. We presume your beds were too good and rich, and hence the extra luxuriance. We would leave the two shoots on the Vine at the spurs in the circumstances indicated—that is to say, if we wished the two bunches.

USE OF A COLD FRAME (W. M.).—The best advice we can give you is to buy and read "Window-Gardening for the Many," and if you go no farther back, read "Doings of the Last Week" since January. Meanwhile, for your encouragement, we would say that you can do all you propose with your frame 20 inches at back and 14 inches in front, and consisting of three lights, but not merely "by putting stable-litter inside of it and shutting it up close," for that would most likely kill all your cuttings, and seeds too, as soon as they were above ground, even without putting in renewals of fresh litter. The first thing you must do is to have your litter made sweet—that is, all the dangerous gases that smell somewhat like hartshorn must be driven off; or, if you use the dung a little fresh, you must cover with old dung, or earth, or ashes, to a sufficient depth to prevent these gases coming through. Now, for such a case as yours, we would throw some dozen or a score of good barrowloads of litter together, watering it where dry. In a week or ten days turn it over, placing the top to the bottom and the sides to the centre. In another week it will be partly wrought or sweetened, but not enough to put plants among it. For that, most likely, it would require other eight days; but, to save time and litter too, we will make the bed with it as it is—larger than the frame by 1 foot each way, which will leave 6 inches at ends, back, and front. Place on this 4 inches of rotten dung or leaves, or 3 inches of earth, and beat or tread well, and then 3 or 4 inches of cinder ashes. After you set the frame on the bed, presuming that the dung is of a depth of from 15 to 18 or 20 inches, the heat will last a good while after the middle of March, and you can plunge your plants in the ashes; but even then, to make sure, leave a little air, though not more than a quarter of an inch, at the top at night. When the heat declines, and you wish for more, move the ashes and the rotten dung. Turn the bed over, putting the fresh at the bottom and replacing the rotten dung or ashes, &c., on the top. If neatness be your object, you might sink a hole for the dung, and the frame would look as if it stood on the surface. All seeds, seedlings, and all potted plants such as you allude to—and, in fact, all plants except those needing more heat—will be benefited by being plunged in such a mild hotbed, because an impetus will be given to root-action; but one thing you must look after, and that is that the encouragement may not be so great as to lead the roots through the hole at the bottom of the pot and into the bed; and then, if the roots have travelled far, the plants will receive a check when you move them. To prevent this, after ten days or so you should lift the plants up, and do so frequently to prevent them rooting beyond the pot. In fact, when they begin to do so, you could remove the pots where they had no hotbed beneath them. Then to the question, "if seeds and cuttings should have air and light, or either, or neither," we must just say that seeds need no light until the seedlings appear, and they will most likely get air if the seeds were not buried, and in that case there would be no seedlings. After the seedlings come they must have air and light too, or they would undergo the fate of our countrymen in the blackhole of Calcutta; but, as they are tender, the air must be given judiciously, as you would give it to a young infant, and the light must be proportioned to their breathing power, as a powerful midday sun might shrivel them up, especially when under glass, and therefore a little shade would be useful in the brightest part of the day. Then, again, if you take off a cutting with leaves, the more air and light the cutting will stand the more robust it will be and the sooner it will strike; but if air and light are given in such quantities as to make the leaves flag and wither, you will either delay the rooting of the cutting or kill it altogether. Unless we could write a Number to suit your case, we must refer you as above for details, and, perhaps, more especially to the little book, which you can receive from this office by post for ten penny stamps.

MELONS SCORCHED (A Constant Reader).—If the roots are burned much you will do more good with young plants. If only a little, water well after you have put fresh soil on the surface. We have not much faith in the plants doing well if much injured. Remove the soil from the surface of the Fern plant as deep as you can well do. Better repot in fresh at once. If you do not like that place some lime on the surface, but remove before you water much.

DESIRABLE KNOWLEDGE (D. B., a Young Gardener).—Your letter is very creditable, and we will think it over. It is honourable to wish to know what most deserves study. In the meantime we would say in all kindliness, do not plume yourself on your Latin, or any other extra knowledge, but get thoroughly indoctrinated into the minutiae of gardening, and read the article by Mr. Fish bearing on the subject some time ago.

KALMIA NOT FLOWERING (A Subscriber).—If the Kalmia is kept moist enough in summer, and has plenty of light, there is almost certainty that it will form flower-buds.

HOYA CULTURE (Idem).—The Hoyas require a very open compost, and plenty of light. We suspect the buds of Paxtoni fall off from too much moisture, or deficiency of drainage. Peat, a little loam, and broken bricks and lime rubbish grow them well. Hoya imperialis requires much the same treatment, and plenty of light, and an average temperature of from 65° to 75°. *Rhododendron javanicum* will do very well in a cool greenhouse or cold pit. Such things as a shoot dying will take place, and the best doctors will do nothing but talk as to the reasons. Ainery will be too hot and shaded.

BOUGAINVILLEA SPECIOSA (A Subscriber since 1856).—We can only inform you that this most beautiful creeping plant is a native of Brazil, and appears to have been first portrayed under that name by Schnitzlein, in his work entitled "Icones Familiarum Naturalium." The first record of its flowering in this country is that it did so in 1853, at Alton Towers, under the care of Mr. Whitaker, then head gardener there. It has since been bloomed elsewhere, and the requisites seem dryness and high temperature to the roots, and training it close to the glass also in a hot, dry atmosphere.

PAXTON HOTHOUSES—SIRKIM RHODODENDRONS (An Irish Subscriber).—We believe those who have tried such houses for common purposes have found the ventilation sufficient, when air was given early. We think that for some things the air would hardly be enough, unless the doors or the triangular space above them were also opened; but it is easy to obtain any amount of air by setting the sashes farther apart. We think the chief recommendation of the plan is the ease with which the whole can be put up and taken down and sent from Land's End to John o' Groats. We are glad the Rhododendrons do so well with you in the north-west of Ireland; they seem quite at home in Ireland. The best time to graft them is just before the shoot-season begins to move. The keeping rather close afterwards will soon cause the union to be effected.

ERROR.—In my article of May 5th, page 326, you print, "Simply because, if carried to any distance, the pressure on the bottom of the boiler and flow-pipe is so great, &c." This should be "return-pipe."—J. E. L., JUN.

NAMES OF PLANTS (F. C.).—*Asphodelus luteus*; *Spiraea laevigata*. (Northumbrian)—*Oncidium pulvinatum*. (M. D.).—1, *Cheiranthus ochroleucus*; 2, *Saxifraga hirta*. (J. F.).—1, *Nothochlœna chrysophylla*; 2, *Erica pubescens*; 3, *Fleurandra* (apparently) *ericaefolia*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BATH AND WEST OF ENGLAND POULTRY SHOW.

I AM much pleased with your excellent remarks in last week's JOURNAL OF HORTICULTURE, respecting the contemplated arrangements for the Bath and West of England Poultry Show. I quite concur with the statement as to the high popularity it has for many years enjoyed in the poultry world, and very deeply regret that the rules which have hitherto guided this Society should be so changed, or at least so complicated, as to place a real stumblingblock in the way of its future well-doing. That all specimens of poultry and pigeons committed to the care of the managers in years past have received the greatest care and attention I feel certain no one will deny; but the complaint has always been raised of the needlessly protracted time the birds are confined prior to the adjudications. True it is that the rules, when first issued, fixed Friday June the 5th as the latest period of receiving poultry, and to meet the above general objection, an extension of time to the evening of the day following is consequently allowed: yet this by no means meets the requirements of those exhibitors who, possessing the best of specimens, feel a natural reluctance to hazard the possibility of a delay during their transit that might either place them beyond acceptance in the showyard at all, or cause them, if returned, to remain neglected at some roadside station, and compel them to be forwarded to their respective owners without any refreshment whatever, solely on account of the next day being the Sabbath.

This feature will compel many other breeders as well as myself from feeling as strong an inclination to support the Bath and West of England Society as we have previously done, although the prize list is remarkably liberal. It is in contradistinction to your remarks in last week's paper, officially stated, the fowls will not be judged until Monday morning, and that then "open judging" in the actual presence of all parties, whether interested or otherwise, will be practised. On the worse than impolicy of "open judging" I will not add one word to your observations; but I earnestly protest against the probable difficulty of poultry being so miscarried as to be forced to remain without any care or attention, if by any neglect of the railway the fowls do not arrive at Exeter at the appointed time, and that for a period so long as to inevitably insure them permanent injury. If they were judged on the Saturday all this might be obviated.—COCHIN.

CROOK'S PATENT PHEASANT FEEDING-TROUGH.

THERE is no doubt that this is a very ingenious contrivance, if pheasants will resort to it—they open it by merely perching on a handle, which they would be tempted to do by seeing the food through a small glazed aperture in the lid. We feared that the noise attendant upon the lid opening, and the lid touching the bird's breast in opening would drive the birds away, and

we wrote to Messrs. Crook expressing our fear. Their reply, from which the following is extracted, is satisfactory:—

"We are exceedingly obliged by your communication, and beg to state that a feeding-box of a similar construction has been in use some years, the cover opened in front like ours. We fix glass on the cover that birds may see the food, which we think useful in teaching young birds to find their food. The main objection to the old make was that in consequence of the action passing inside the food-chamber it became clogged, would not work, and remained open, and other animals devoured the contents. Some gentlemen from the north came last week to inspect them, one of them left an order for twelve; another one sent an order this morning for twelve, and says he will send a lot of old ones to alter like ours."

CAUTION TO ADVERTISERS.

PERMIT me to caution the advertisers in the Journal against supplying goods of any description to applicants from Manchester, without the cash or a respectable London reference.

The Long firm has just favoured me with a good order, to be left at the London Road Station till called for. In this instance, however, the swindlers have only lost their time and postage stamps.

Nothing comes amiss to these scoundrels. No sooner does a new advertisement appear than an order is given, which in too many instances is successful in obtaining goods, the promised post-office order being never remitted.

Application to the police is in vain, as the matter is merely one of debt; and legal proceedings are equally useless, as the fellows shift from one hiding-place to another with the greatest rapidity.—AN ADVERTISER.

CLIMBING BIRDS.

THE tree-climbing or creeping birds are of various species, as the Creeper, the Nuthatch, the Wryneck, and the Woodpeckers.

THE CREEPER or Tree-crawler, is a small dark brown bird that visits this country only in summer. The bill is long and slightly curved; the claws sharp and well adapted for clinging to the trunks of trees, which they do in search of insects, of which their food consists. They form their nest usually in a hollow or hole in a tree.

THE NUTHATCH remains with us through the winter, hunger making him bolder, when he is more frequently seen, and may be occasionally caught and tamed. The male is a rather handsome bird, with his bluish cloak and orange vest, a blue mark on the forehead, and a black streak from the beak across the eye. The female is not so brightly coloured. They build in holes in trees and feed on insects, which they collect by climbing the stems and branches of trees, and in this they are very expert, surpassing Blondin or Olmar in their gymnastics.

THE WRYNECK, Snake Bird, or Cuckoo's Mate, is a delicate summer visitant, arriving in England about the same time that the Cuckoo does. They build in hollows or holes in trees, and have a peculiar manner of writhing or twisting the head and neck. The bill is straight, rather long, and the tongue is very long, by which they are enabled to catch the insects on which they feed. The feet are formed like a parrot's—two toes in front and two behind, so that they can climb easily. The colour is greyish, streaked and barred with darker shades.

OF WOODPECKERS we have three or four kinds natives of England. They are known in different districts by various names, as Woodwale, Yaffler, Gally Bird, &c.

The Great Spotted, the Striated or Lesser Spotted Woodpecker, and the Green are those generally found in this country. They have strong beaks, with which they rap the limbs of the trees to frighten the insects; they thus cause a jarring or vibration, which makes the insects run out and expose themselves, so that they can feed on them. Their tongues are peculiar in form and they can dart them out to some distance, and thus secure their prey. Their feet are formed with two toes turned back and two in front. The tail is short and furnished with stiff points to the feathers, which assist the bird in climbing. They are all very useful birds, destroying and keeping in check those insects that work beneath the bark of trees and thus injure much valuable timber. In forming a hole for their nest they only bore into a decayed part, not into sound wood as some suppose, which would be far too hard for their tools. As they do no injury of

any sort, but are very useful in preserving timber trees from the undue attacks of insects, they, as well as the other tree-climbing birds, should be protected by all growers of wood or trees; and it is hardly to be doubted that those trees, of which we so frequently hear complaints of their dying from insects burrowing beneath the bark, would have been saved if the Woodpeckers and other tree-climbing birds had had access to them.

I have now concluded my articles on small British birds, and it only remains for me to offer a few remarks on the larger birds as Doves, Game, Waders, and water birds in my next.

It may be thought that I have omitted the hard-billed or seed-birds—such as the Grosbeaks, Finches, and Buntings; but I have so recently described them in my series on "The Canary and British Finches" lately published in this Journal, that it is unnecessary to recapitulate; and I have nothing to retract and very little to add, except to thank "ORNITHOLOGIST" for his fact in support of my assertion that more fruit is set on those trees and bushes which are disbudded by the Bullfinches. I only regret that he did not append his real name to his communication, as a *nom de plume* rarely carries so much weight in authenticating a fact as the signing of a correct name.—B. P. BRENT.

BEEES TRANSFERRING THEIR ALLEGIANCE.

A CIRCUMSTANCE took place in my apiary a few weeks ago which I deem worth relating, as illustrating Mr. Lowe's remarks in page 61 on the partial deserting of hives.

On the 2nd of last month I placed in my garden a strong hive of common bees which had come from a distance, and the bees had therefore passed some days in confinement. They rushed out as soon as liberated, standing in a crowd round the entrance, and with vibrating wings, sang loud peans in triumph over their recovered liberty. Numbers took wing, and each as it returned added its quota to the universal jubilation. Having occasion to examine the next stock (a pure Ligurian one), I thoughtlessly and unfortunately opened its hive whilst the excitement was at its height, and the consequence was, that nearly every worker deserted it and joined the noisy ones, leaving the poor queen almost "alone in her glory." Here was a dilemma! and what was now to be done? Ligurian colonies are by no means to be trifled with, and this one having a young, remarkably handsome, and pure queen, was destined for the apiary of "A RENFREWSHIRE BEE-KEEPER." Whilst I deliberated in perplexity, the poor queen, evidently disgusted at the turn affairs had taken, presented herself at the entrance, rubbed her eyes in astonishment, and attempting flight fell at once to the ground. This brought matters to a climax, and as soon as I had secured her (which was not immediately, for she fell amongst some grass, and I had to hunt for her), I popped her into a queen-cage with two or three of her remaining subjects, and put her into her hive. So far so good; but what was to be the next move? To tell the truth matters looked rather unpromising. I thought at first some of the truants might return, or that at any rate those that had gone honey-gathering would come back to their old home and comfort their sovereign in her distress. Not a bit of it. Louder and yet louder pealed the song of triumph next door, swelled now by the recreant voices of the traitor Ligurians; and if by chance a stray pollen-laden bee looked into its old habitation, it was only to depart immediately, evidently impressed with the conviction that it did not lodge there, and that it was bound at once to accept the hospitable invitation which resounded unceasingly from the portals of the adjoining mansion. Once more I looked into the deserted hive, and took stock of its contents. Food there was in abundance, and good brood-combs; but for inhabitants, only the forlorn queen and her three attendants traversing unceasingly their narrow prison.

Desperate diseases require desperate remedies; and although I knew the danger of introducing strange bees under such circumstances, I had no other course to adopt. Brushing off the noisy cluster that had occasioned so much mischief, and disturbing the hive as much as possible till I was surrounded by a cloud of combatants that speedily exchanged their notes of joy for a cry of vengeance, I bore the offending colony to the other side of the garden, and substituted for it the abandoned hive. It was amusing to observe the instantaneous change that took place. All appeared unwilling to enter the deserted mansion; but roamed disconsolate outside, ever and anon taking wing and returning once

again after circling round and round in the air in the vain attempt to discover their lost treasures. Ultimately they entered the hive and clustered over the brood-combs; but still the doorway presented a scene of confusion, whilst within a dense knot of would-be regicides clung to the queen-cage with bull-dog-like tenacity, striving by every means in their power to wreak fell vengeance on its unoffending tenant. During two days did this regicidal mania rage with unabated virulence; but on the third day it had so much subsided that I ventured on the release of the royal prisoner. Even then it was too soon, for though well received at first she was soon afterwards imprisoned by the hostile bees. Having effected her release, I was compelled once more to ensconce her in the queen-cage, whence twenty-four hours afterwards (four days from the commencement of her incarceration) I had the pleasure of liberating her and finding her well received by her heretofore-rebellious subjects.

The immediate effect of the mischance which I have above related, was to convert a pure Ligurian into apparently a perfectly black colony, since the Italians almost without exception stuck to their new colours; but I think the hive rather gained in population than otherwise. Before dispatching it to Renfrewshire, the Ligurian element had again asserted itself, whilst the queen laying eggs in abundance gave promise of that prosperity which I trust may await the hive in its new locality. —A DEVONSHIRE BEE-KEEPER.

THE BEST ASPECT FOR BEES.

In reply to Mr. Fox on the aspect for bees, I beg to state that from my experience in different places in the west of Scotland, I have always found hives facing from south-east to due north the best. At this moment I have hives standing in all directions, and those facing the north are a long way ahead of those facing the south, although the former were weak in autumn compared to the latter, and lighter in weight. They were later in commencing work in spring; but they are now sure to be the first at work and last to stop: hence their progress. As for the quarter that most rain comes I do not mind that. Wind is a greater enemy to them than rain, so that I always try to avoid the high winds. From south-west to north-west are the points that the higher winds come from in this quarter. Of course, I speak as if they stood in an open plain, and refer only to where I have had experience, and it teaches me to avoid the tempting rays of the sun in spring, and its burning heat in summer. As a proof, in 1861 and 1862, hives facing the north were the only ones that swarmed with me. —A LANARKSHIRE BEE-KEEPER.

QUEENS DESTROYED BY THEIR OWN WORKERS.

I OBTAINED a strong hive of bees in the autumn of 1861. In May, 1862, it threw off a strong swarm. Both stocks destroyed their drones in the first week of July. In February of this year both hives seemed in good condition, and on fine warm days were busy in collecting pollen from crocuses and the shrubby veronicas. One day I found a queen stupefied on the ground beneath the parent hive. On warming it in my hand it partly revived, and entered into the hive, but was expelled again and soon died. The bees, however, continued to work and carry in pollen, but after two or three weeks no increase in their numbers took place. About the end of March I observed a young queen come out and fly away. She returned in about ten minutes. On another fine day I observed this take place twice, the working bees taking no notice of her. The first week in April I found her one morning dead before the hive. The bees were not working, but running in and out in confusion even till late in the evening. This was continued the next day, and two or three hundred were scattered about dead. Since then the bees are quiet, decrease in numbers, and only work for a short time in the middle of the day, seldom before twelve o'clock, or after three. There is no confusion, they only appear lazy, and have no young ones. They carry in a little pollen. The other hive is doing well, as drones appeared on the first of May, and it is very strong. I presume I shall lose the hive, but shall be glad of an explanation, and whether anything could have been done. They did not want food. —J. R.

[The first queen which you discovered on the ground in a stupefied state, had, doubtless, been stung by her own workers.]

The second was a young one which they reared to supply her place, but as she could not become fertilised at that early season owing to the absence of drones she ultimately met the same fate as her mother. We have ourselves lost several valuable stocks this spring from the same cause, but we are utterly unable to assign a reason or prescribe a remedy for this suicidal conduct on the part of the bees. Although we have never seen it noticed in any English work on the subject, this phenomenon has not escaped the keen eyes of German observers. Dzierzon says that when a queen is found outside the "brood nest," she is always in danger of her life from the stings of the workers, and he accounts for these frequent regicides during an unfavourable spring on this hypothesis. We cannot say that we deem his theory in this respect altogether satisfactory; but we know of no better. The fact is, it is a recently-observed, mysterious, and very unsatisfactory chapter in the natural history of the honey bee, which it may be long ere we are able fully to unravel.]

LIGURIAN BEES DO SUCK THE RED CLOVER.

WITH regard to the query propounded in your columns as to whether the Ligurian bees suck the common red clover, on observation it will be found that this may be answered in the affirmative, at least in so far as my observations have gone. During last summer there were two fields adjoining my apiary: one of pasture containing a little white clover, and another of hay, containing white clover, red clover, and Alsike clover (*Trifolium hybridum*). This variety, which has been largely sown in Berwickshire of late years, has a close resemblance to red clover both in stalks and flowers, the petals, however, being all tipped with white, and probably not quite so deep as those of the red, but much longer than in the white clover.

During the wet ungenial weather which we had last summer, I noticed that whenever the bees could get abroad they invariably took to the hay field; and wishing to solve the question as to which of the three varieties they gave the preference to, on observation I perceived, contrary to my preconceived opinion, that they were working most anxiously on the Alsike and red clovers, leaving the white clover almost untouched.

However, it must not be inferred from this that the preference would be given to either red or Alsike in ordinary circumstances, as it is a well-known fact that in most seasons they decidedly prefer to luxuriate in the pasture fields of white clover when within reach in preference to the others; and we can account for their somewhat anomalous proceedings on the supposition of the white clover being opener and shorter in the flower-petals than the other varieties, consequently the nectarous juices were the more readily washed-out by the daily drenching rains which we had during the last summer, whilst the others retained part of theirs, and the Ligurians found it possible to extract these juices when favoured with a few hours of sunshine. —J. S.

DRONE-BREEDING QUEENS.

SUBSEQUENT to the date of my last communication on the "Mortality of Hives," wherein I expressed my belief in the practical worthlessness of drone-breeding queens, I find from a report of a meeting of German bee-keepers held at Potsdam, as inserted by Mr. Woodbury at page 270, that one of the subjects discussed at that meeting was this very question "Of what practical value is a drone-breeding queen in the spring?" and that an almost unanimous decision was apparently come to in the negative—namely that such a queen has for the "rational bee-keeper no value whatever." Now though this verdict of the German bee-keepers practically coincides with my own views on the subject, yet considering that these same apiarists are not always infallible in their opinions more than myself, I am much pleased to find that Mr. Woodbury is himself endeavouring to work out a solution of the problem by instituting, in the novel form he indicates in No. 109, a fresh inquiry into the subject. If he should be successful in establishing the affirmative of this proposition, "Are drone-breeding queens of any use to the apiarian in spring or not?" then he will at all events have the honour of upsetting the general belief among bee-keepers on the subject; and as the point is an interesting one, it is to be hoped that he will not fail to report the results of his present experiments.

Assuming the doctrine of parthenogenesis to be true, and viewing the subject in that light, there can of course be no

possible ground for doubting that males produced by drone-breeding queens in proper cells will be as physically perfect as those produced by normally conditioned queens in the ordinary way. Certainly it is not for me to express a doubt as to naturally reared and fully developed drones, by whatsoever queen produced, being physically perfect creatures and capable for all the uses which nature has designed them for. No: I have no such doubts; but it must be remembered that according to the strange theory of Dzierzon, in reference to which I made the comments on the subject, all drones, even the most perfect are "altogether imperfect creatures, for the production of which so many forces and conditions are not necessary, even on the part of nature as for the production of the queen, and, what is the same thing, for the workers."

Independently of the fact, however, to which I before adverted—that when drone-breeding queens are left to themselves, the males produced by them are generally reared in small cells, and that consequently we must consider such males as physically imperfect upon the same principle that we consider female bees imperfect because reared in small cells. Independently of this fact I am inclined to believe that there are other elements of an adverse nature which will unfavourably operate against Mr. Woodbury's experiment, notwithstanding all the helps and appliances which he has put into requisition in order that fully developed drones may be secured. Some necessary attending circumstances may be wanting—some essential conditions absent in all this artificial process which will militate against success, and prove the result not so satisfactory as anticipated. I doubt, therefore, if Mr. Woodbury will be repaid for the trouble he is put to, and the injuries caused to his other hives by the abstraction of brood-comb from them for the purpose of keeping up the daily diminishing population of his degenerate colonies; and that even should occasional experiments in that way be crowned with success, it would turn out that in practice failure would be more the rule than the exception.

As an experiment, however, of rather a novel character, I shall be delighted to hear of results which it is to be hoped Mr. Woodbury will not fail to make known in due course.—J. LOWE.

BEE-HOUSES.

WILL "A. K. H., *Westhorpe*," be kind enough to explain how he manages to exclude the wind and rain from his hives in his open bee-protector, while it allows the current of air to pass freely through? I have no doubt but his method is good; but judging from its appearance on the diagram at page 179, it appears to be a high, open, unsightly edifice in an apiary. But as he has not given a scale of the size one cannot say much about its merits or demerits.

Will he also explain how he manages to hasten the progress of the bees in spring by the heat of the sun? how he manages to keep the temperature the same at night in the hives by a few hours' sunshine through the day? From the experience I have had, the best heat I can get is to put my hives by in autumn well peopled, and from 35 lbs. to 50 lbs. gross weight, allowing 10 lbs. for hive and board, and well sheltered from sun and rain in the bee-houses, the construction of one of which I will try to explain.

It is a square-framed house 6 feet 6 inches long, by 3 feet 3 inches wide, and 5 feet 6 inches high over all, covered with five-eighth lining. Roof projecting and well ventilated, 1 foot 6 inches to the floor, where the hives stand—a height which I think is quite enough. The hives are all on one level, which is much better than having one hive above another—a practice which should be avoided, for the bees of the higher story frequently fall down and enter the lower hives, where they are killed. I place two hives on each side and one at each end. A door is cut out at each hive 2 feet by 1 foot 6 inches, and it shuts close to the front of the hives, preventing the bees lying out between the house and hive. I may state that the house is boarded to the ground to prevent the wind drifting the bees if they happen to fall when coming close to the hive, as there are more bees lost in spring close to their hives than at a greater distance, for the cold benumbs them at once. To prevent this, I take care to have all round the hives well strewn with dry ashes, &c.—A LANARKSHIRE BEE-KEEPER.

Café au Lait.—The French are justly celebrated for this breakfast coffee, which may be made as follows:—Use an infusion,

of double the usual strength, and when clear, pour it into the breakfast-cups, which have been previously half or three parts filled with boiling milk, sweetened with loaf sugar.—(*Prairie Farmer*.)

OUR LETTER BOX.

BATH AND WEST OF ENGLAND POULTRY SHOW.—Mr. Pitman says, "Our entries close next Saturday, the 16th. Specimens will be received up to a late hour on Saturday, the 6th of June, and judging commences (open, under certain restrictions necessary for the comfort and independence of those important officers) on Monday, the 8th of June."

COCHIN-CHINA HEN WITH DISEASED LIVER (*An Amateur*).—The lumps in and upon the liver were ulcers, and when a bird becomes so organically diseased we know of no treatment likely to restore it to health. In the case of a very valuable bird being so affected it might be worth while to try what a daily dose of calomel would effect.

HENS FOR EARLY SITTING (*J. W.*).—It is not the property of any particular breed to sit early. It is the result of calculation, and may be arrived at with almost the same certainty as an ordinary addition. It is the question, that immediately follows the frequent query as to the breed that will lay best in the winter. That which lays best in the winter will sit earliest in the spring. They follow as naturally as manhood and childhood. As soon as a hen has laid her number of eggs, the course of nature makes her anxious to sit. Those, then, who wish to have January chickens will be careful to keep early pullets of the previous year, which will begin laying in October. They will want to sit in December. This can be done only with pullets. Their first laying is a question of age, after that they are creatures of routine and season. Your feeding is bad. Rice is the worst food there is. Indian corn and meal may do for a change, and may be given beneficially once or twice per week, but not oftener. No fire or artificial heat is necessary for healthy fowls. Dorkings are excellent sitters. Most fowls sit well, but all are not good mothers.

EGGS MOST-FLAVOURED (*T. J. H.*).—When an egg is first laid the shell is soft, and capable of transmitting a taste or odour from without to its contents. Its flavour is also affected by any particular food, as garlic, onion, malt. It seems to have a peculiar aptitude for acquiring the taste and smell of hay, moss, sawdust, and the like. The best bottom for a nest is a sod of grass. Shavings are likely to communicate a flavour. It may be that the taste of which you complain arises from some food they find in the wood, possibly grubs or insects harboured by the moss at the roots of the trees. If it be so, it will be only temporary. Let your hens have sods of grass at the bottom of their nests, and we do not think you will have any lasting complaint against their eggs.

COCHIN-CHINAS' FEET TURNED INWARDS (*Clarence*).—It is difficult to assign a cause for the turning-in of the toes of Cochins. Part of it is natural. They have short toes, and the middle ones of both feet turn inwards. In some cases they are almost web-footed. A very hard and impenetrable flooring to the house may have its influence, inasmuch as the nails that would enter into the loose earth or gravel, and which turn downwards, are compelled to turn sideways. Stones, bricks, or boards will cause this. The gravelled run may not be altogether guiltless if it is hard-surfaced like a garden path. We advise you to put up perches within 18 inches of the ground. We have no doubt that will partly cure the evil. It would not affect the laying unless it interfered with the health of the birds.

BANTAM LAYING SOFT EGGS (*Hibernicus*).—The soft eggs and the feathers shed from the neck, we consider evidence that the hen's food is too stimulating. We should give her a dessert-spoonful of castor-oil, feed her for a time on mashed potatoes mixed with a little barleymeal, let her have plenty of lettuce leaves, and take care that she has free access to plenty of limy rubbish.

DISEASED PIGEON (*A New Subscriber*).—Your Pigeon is "going light," to use the fanciers' phrase. This depends on some internal organic cause and is rarely recovered from. Fantails are especially liable to the inconvenience alluded to. You are right as to the cause.

CANARY CEASING FROM SINGING (*Old Deer*).—The only causes we are aware of which would account for a bird not singing are either being too fat, having moulted the second time through cold, being too old, or having been used too often for breeding. The first-mentioned is most probably the case with your bird.

AUSTRALIAN PARROQUET (*E. M.*).—We find that No. 50 is out of print. Apologising for the trouble given, we reprint from that Number the information you ask. "The Australian Grass Parroquet breeds freely in confinement in this country. The cage should be square, of a middling size—2 feet 6 inches by 2 feet by 15 inches, with wire front only. Place at one end a rough box about 18 inches high and 7 inches square, covered with dry moss to represent an old stump, and having a hole large enough to allow the birds to have easy access. Place a tray or half a cocoa-nut shell inside, containing the nest already shaped, composed of dry moss, grass, and wool, similar to what Canaries build with, with some loose in the cage. Place the cage in a retired situation. Feed the old birds on canary seed; when they have young add boiled egg, millet, and mawseed, and when long grass is in seed let them have a bunch of it hung up. The price is about 25s. per pair. I do not know of any instance of Love Birds breeding in confinement."

—W. G.
LIGURIAN BIRDS (*J. R., Penzance*).—Write to T. Woodbury, Esq., Mount Radford, Exeter.

LONDON MARKETS.—MAY 11.

POULTRY.

We have a good supply of poultry for the time of year, but not more than an average. Trade is, however, so bad that it is sold with difficulty at a slight reduction.

	f.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	4	0	4	6	Guinea Fowl	3	0	3	6
Smaller do	3	0	3	6	Leverets	3	0	3	6
Chickens	1	9	2	0	Rabbits	1	3	1	4
Goslings	6	0	6	6	Wild do	0	8	0	9
Duckings	3	0	3	6	Pigeons	0	8	0	9

WEEKLY CALENDAR.

Day of Mnth	Day of Week.	MAY 19—25, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock after Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				degrees.			m. h.	m. h.	m. h.		m. s.	
19	Tu	Lonicer died, 1586. B.	30.052—29.884	80—40	S.W.	—	5 af 4	47 af 7	39 9	2	3 48	139
20	W	Woodroof flowers.	29.767—29.613	70—41	S.W.	—	4 4	49 7	21 10	3	3 45	140
21	Th	Sun's declin. 20° 9' N.	29.646—29.531	63—35	W.	.18	2 4	50 7	55 10	4	3 41	141
22	F	Mugwort flowers.	29.748—29.492	65—47	S.W.	.02	1 4	52 7	24 11	5	3 38	142
23	S	Goosegrass flowers. [1819	29.756—29.735	66—47	S.W.	.04	0 4	53 7	49 11	6	2 33	143
24	SUN	WHIT SUN. Q. VICTORIA BORN.	29.926—29.895	69—40	N.W.	—	III.	54 7	morn.	7	3 28	144
25	M	WHIT MON. PS. HEL. B., 1846.	30.047—29.924	67—33	S.W.	—	58 3	56 7	10 0	8	3 23	145

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 66.8° and 44.2° respectively. The greatest heat, 89°, occurred on the 22nd, in 1847; and the lowest cold, 30°, on the 19th, in 1854 and 1856; 20th, in 1853 and 1856; and 24th, in 1854. During the period 154 days were fine, and on 98 rains fell.

ORCHARD-HOUSE MANAGEMENT, AND CAUSES OF FAILURE.



MOST lovers of horticulture seem to be drawing their attention to the culture of fruit trees in pots under glass, or, as some people call it, the "Rivers system of growing fruit." That such a "system" is interesting, no one will deny; but few people seem able to make it profitable. I will, therefore, endeavour to

show some of the causes of failures, and to point out to amateurs several little rocks on which so many have been wrecked.

As glass is very cheap, a rough but convenient orchard-house can be put up for a small sum. This, I believe, has induced many people (a good part of them clergymen) to purchase Mr. Rivers' book. In that book they find pictures of the author's pet plants beautifully laden with fruit. This tempts them to get an orchard-house; they decide on having one. Well, the house is built, the trees are bought, and now comes the work of potting. And how is this important operation performed? Very often in such a manner as described by "F. Chitty."

That operation being completed, the trees are, most likely, arranged in their respective places, and the owner views them with a degree of pride. Perhaps they are good-sized trees, and have blossom-buds. These as the season advances will be expanding. Then comes the setting of the fruit—a result almost certain, providing the trees have abundance of air, and the roots are kept tolerably moist.

Perhaps the fruit set very thick, and, if they be Peaches, Nectarines, or Apricots, will require thinning. But the amateur does this very sparingly, leaving after the final thinning perhaps three dozen fruit on a tree not capable of bringing half that number to perfection. The result is a large crop of small ill-flavoured fruit.

Thinning of the young shoots of Peaches and Nectarines is to the beginner a rather difficult operation, though Mr. Rivers would have it appear a very easy matter. Most people thin them too sparingly, leaving a mass of young wood, which, unless the weather be very favourable, cannot be properly ripened. Some, however, thin too severely, thereby robbing the fruit of its nourishment, and destroying the fruiting-wood for the following season.

I know some gentlemen who do all their orchard-house work themselves, and I know others who leave their

trees entirely to the tender mercies of their "groom and gardener," who, as one of your correspondents remarks, "knows very little of either business," and to whom the trees are a "great nuisance," as they give him extra work. In such cases the poor trees are likely to suffer for want of water. Perhaps the man is ordered to give them liquid manure, and he does it with a vengeance, bringing it thick and strong from the cow or pig yard unstrained, and unmixed with anything. The effect of this is not long in making its appearance. I once saw some very fine Peach trees which had lost nearly all their leaves long before the fruit began to ripen. On looking at the soil, I saw they had been watered with strong liquid manure. This was, undoubtedly, the cause of the leaves falling so early.

Growing too many sorts of fruit in one house is a very bad practice, and is often the cause of much dissatisfaction. Peaches and Nectarines will be found to do best by themselves. Apples, Pears, and Plums may go together. Apricots and Cherries do well together; and for all these fruits (except Peaches and Nectarines), tiffany-houses will be found most suitable.

A gentleman once asked me to look at his orchard-house trees, which he said were in a very unhealthy state, the cause of which he could not discover. I found the trees as he described them: they were very free from insects, and the surface soil seemed nice and moist. I tapped the pots, and the sound produced told the cause of sickness—the trees were dry at the roots. They had been potted too loosely, the body of the pots containing only a few crumbs of dry soil. The watering seemed to have been performed on the "little-and-often" system, just to keep the surface moist. And what is the result of all this mismanagement? A complete failure. Those visions of fine ripe fruit have never been realised, and the orchard-house is condemned.

Some, however, are more fortunate. I, for one, have been pretty successful; but success cannot be attained without exertion, for every one who has had the management of orchard-houses will admit that the inmates require great attention compared with the same kinds of trees on the open wall. But the labour is not thrown away, for the reward will be in proportion to the attention bestowed.

To those who are about to build an orchard-house I would say, Have a lean-to, and, if convenient, against a brick wall. With regard to the shape of trees, close pyramids are by far the best. When the trees are received from the nursery their roots should be examined, and if found at all naked should be cut back pretty close. Some compost should then be ready, consisting of two parts the top spit of an old pasture, one part road scrapings, and one part decayed cowdung. This will be suitable for most fruit trees.

The compost being ready, some pots should be selected. The relative proportions of these and the trees should be considered; and if they are of the ordinary kind, the apertures in the bottoms must be enlarged, leaving only just a bearing for the crocks. These should be long and

narrow, and placed so as to leave room for the emission of the roots of the tree. Some rough stuff, such as pieces of decayed turf, may then be placed on the corks, and then some compost, and made pretty firm; and over that the tree should be placed, just in the centre, care being taken to keep the surface roots about 2 inches below the top of the pot. The compost should then be put in a little at a time, ramming it firmly with a stick as the work proceeds, finally filling up to within an inch of the top of the pot. The whole should then receive a good watering, and the stems (but not the bearing-wood) be washed with a composition formed of one pound of soft soap, two ounces of tobacco, and a little flowers of sulphur, to which must be added as much boiling water as will form the whole of the consistence of paint.

Supposing the above to be done about the middle of February—which is the best time for potting—the trees may be placed in their summer quarters, and the young shoots cut back according to the desired shape of the tree and the strength of the shoots. After that they will require very little attention till the blossom-buds begin to expand. Watering must then be gradually increased, and abundance of air given; in fact, when the trees are in bloom, the shutters need not be closed, except in case of frost or fog.

When the fruit is set, the trees should be syringed with soft water about 4 P.M., of every warm sunny day, at the same time closing up the front shutters of the houses, but leaving an opening at the top of each end. As the weather becomes warmer the houses must be left open longer, and after the 1st of June they may be left open altogether.

The Peaches, Nectarines, and Apricots will most likely require thinning, and supposing the trees old, eighteen fruit may be left on each, these after the lapse of twenty days to be reduced to nine on each. The following season double that number may be allowed. The other hardy fruits seldom require thinning.

When the young shoots of the Peaches and Nectarines have made four leaves, every third shoot should be removed, and after another fortnight every fourth shoot should be taken off with a sharp knife, and the tips of the remaining ones pinched off, as also the tips of Apricots and Plums.

It is, however, quite impossible to give directions for thinning the shoots in all cases, as sometimes the trees make very little wood, and then allowance must be made. One important point is, to get the fruit near to the leaves.

The Peaches and Nectarines will soon be making fresh shoots, and these must be pinched back to the sixth leaf, and so on with the next. I have found three stoppings quite sufficient for the whole season, as incessant pinching causes the tree to produce a superfluity of blossom-buds, causing a scarcity of leaf-buds.

One stopping of the shoots will generally be found sufficient for Apples, Pears, Plums, and Apricots, except in very strong-growing trees. I consider that cleanliness, plenty of air, light, and moisture, are the chief points to be remembered, for the absence of either of these will cause a failure.

When the fruit is ripe and gathered, every attention must be paid to the ripening of the young wood, by keeping the house dry and warm and gradually withholding water from the roots. When the wood is ripened the trees may be put close together in a corner of the house, and the borders cleaned to receive Chrysanthemums, Lettuce, Endive, Parsley, and many other things that require a slight protection from the frost.

In the latter part of February the trees may be arranged for the summer, and the stems be washed as before directed. The surface soil should then be removed, and the space filled up with a dressing of decayed dung. I do so three times during the growing season.

I have not seen any "miniature fruit trees," such as Mr. Rivers describes, but I intend to get some. In Japan the "art of dwarfing trees" is one of the chief points in ornamental gardening. When Lord Elgin was in that country, a box was offered to him, in which were flourishing a Fir tree, a Bamboo, and a Plum tree in full blossom. The size of the box was 4 inches long, 1½ wide, and 6 high. The price asked was about £100.—G. G., Wells.

VIOLETS.

THE provincial gardener residing at a considerable distance from the great metropolis, and who visits it but seldom, cannot fail being struck by the endless quantity of good articles in the gardening way which he will see around him in all directions,

even in midwinter, or in the spring after an unusually severe winter, when the outcry far and wide is that everything in the Broccoli and Cabbage line has been destroyed. He will see cart-loads of these vegetables wending their way into the centre of the great city, while vendors of such things scattered all over the town present the same in more or less profusion; the price rather than the seeming scarcity is the only thing that betokens a limited supply. Other things as well as vegetables find their way into town, and certainly not the least attractive of the varied articles which form a considerable item in the trading transactions of street vendors is the flower which forms the subject of my present notes, and one which is carried through as extensive a period as any flower we are acquainted with.

"Violets, sweet Violets!" is an agreeable cry, the more so as being heard when the weather and other surroundings are anything but pleasing. Violets have attractions which even in a dull cheerless November day remind one that other senses as well as the one which appreciates the beautiful may be brought into operation. However fastidious the individual may be about smells, and the writer of this is one of that class, Violets are of the class of plants which every one admires, and a nice little knot of Violets is acceptable alike in a lady's boudoir and on the mantelpiece of the humblest cottager: it is, therefore, needless to make any apology for jotting down a few remarks on its cultivation.

Too often some out-of-the-way corner is the one assigned to this plant. Presenting little that is gay at a time when the parterre is a blaze of beauty, its merits seem forgotten at the time it most deserves attention, so that when the season for flowering arrives the result is not always satisfactory; for though the plant is very hardy, and will accommodate itself to most situations, there are some more favourable than others, and it is to these that we ought more particularly to direct our attention, and in a few words detail the practice most likely to produce a good result. At the same time it must be observed that some situations present natural advantages which it would be difficult to imitate, yet much can be done, and the plant, as stated above, is very accommodating. Nevertheless, it is not everywhere that it succeeds satisfactorily, and a glance at those where it does prosper may teach us how to manage it so as to procure a similar result; and, perhaps, the best way to consider the subject is to trace the plant to its wild state—the original British one inhabiting dry banks by the side of lanes and woods, where it blooms profusely in early spring.

The best situation both for the Neapolitan and double and single Russian Violets are those rather stiff soils overlying chalk, and where the plant has an opportunity of enjoying the free air, and not overshadowed by trees, especially evergreens. I am not sure but a slight shading with deciduous trees is beneficial rather than otherwise, as the plant is so liable to red spider in hot summers; and a partial shading from the hot midday sun induces the dew to remain longer on the foliage, and, consequently, renders the plants less injured by this pest. A soil too rich is more likely to produce leaves than flowers, so that manuring too freely is not advisable.

When a new plantation is wanted, it is best to make one as soon as ever the plants are rooted sufficiently to be taken off. The plant generally produces abundance of runners after it has done flowering; and to induce them to root freely, and quickly become plants, it is very good practice to sift some leafy mould or fine soil amongst the shoots, and, if the weather is dry, to water once or twice. Generally it is the end of May ere the young plants are sufficiently rooted to be taken off with advantage, when, the ground being previously well dug and prepared, they may be planted in rows about 18 inches apart, and allowing about a foot from plant to plant in the row. This planting ought to be done in damp weather if possible; and the little after-attention required during the summer is simply to remove any runners or suckers that show themselves. It is better to allow them to grow a little, and then cut them off, so as to encourage the main plant to form a head or crown well set with flowering-buds for the ensuing season. It is attention to this that makes a plant tidy-looking, and retains it in a condition fit to remove with a ball if wanted in autumn. Observe that a too frequent stopping all laterals or runners is not such good practice as letting them grow some length and then cutting them all back; for the pruning of the Violet is something like that of the espalier Apple or Pear tree—to cut off every shoot as it is found is more hurtful to the tree than allowing them to arrive at nearly their growth, and then removing them to enable all the

energies of the tree to go to the formation of flower-buds (in embryo) for the ensuing season. The Violet, though an herbaceous plant, may be treated exactly the same way, and with a like happy result.

Now, the above treatment, simple as it is, is not the only attention required during summer. The plant being very liable to red spider, means must be taken to counteract it if possible. For that purpose a mixture of sulphur and soot is about the best thing that we have tried, and when any of the leaves turn yellow it is often a sure sign that this pest is at work. A good watering when the atmosphere is moist will do some good, and when the plants are dry dust them well with the mixture mentioned above. The admixture of soot will render the colour more like that of a healthy plant, and the formation of flower-buds will go on more prosperously in proportion as the plant is healthy: by which is meant, that it is supposed to be maturing its tissue in proper time and not prolonging the season's growth, or becoming what may be called gross and leafy. We need hardly add that occasionally moving the ground between the rows is useful also during the early summer season, afterwards we expect the plant will occupy it all.

The forcing of the Violet is far from being at all times a successful operation. The plant is impatient of forcing as generally performed. It may, however, be forwarded considerably by gentle means, not the least being the well and early preparation of the plants the preceding summer, so as to enable the plant to have a period of rest ere it be excited again into growth; for if forced too early, leaves only will be the result. The best way is to prepare some plants as directed above, and in October take them up with a ball and plant them in an old Melon-bed that has a little bottom heat (but very little), remaining. The plants may be placed tolerably close, and with sufficient soil to enable the roots to have plenty to live upon while the plant is in the frame. We need hardly add that they must be near the glass; and if the position of the frame be one that it is advisable to keep orderly, the interstices between the plants may be paved with pebbles not larger than an egg. This will keep the flowers from being dirtied in the soil. A little watering at the time will be necessary, but will hardly be wanted afterwards. Violets may also be taken up and forced in pots, and they do pretty well that way.

Unlike many of the kinds of plants cultivated for appearance or use, this one has derived but little accession in the way of new varieties for many years. True, now and then an improved tree Violet is offered to the world, but it very often settles itself down to be the old sort in a better state of cultivation. Improvements on the single or Russian Violet are also announced occasionally; but they too often degenerate into the original. Therefore, without noticing the names of the great raisers of such things, a slight allusion to the kinds in most general use will be sufficient for this article.

First in point of importance is the old dark blue Violet, from whence one more than usually woody or leggy has been transformed into the tree Violet. This is, perhaps, the prettiest of all the Violets, and it has the advantage of presenting us with a few flowers almost during all the summer. It does not flower, however, so well in the winter; but when well grown and the plants well and early ripened, it often flowers in March when sheltered rather than forced. I believe there are improved varieties of it said to be larger; but they do not differ in any material point from the original.

Next to this variety is the Neapolitan Violet, a pale blue variety, more free of growth and better adapted for forcing. The habit of the plant is more spreading and requires more pruning to keep it in order. It is, however, less susceptible to red spider perhaps; but is, nevertheless, not more hardy than the others. It is, perhaps, better adapted to a light soil, and some insist that it is sweeter than the dark one; but this is doubtful. The stalks of the flower are, however, longer and bunch better, and contrasting with the others it is better to have both.

There are double white ones of both the above varieties; but the whites are not so generally admired, and the white Neapolitan is a poor one.

Next, therefore, in importance to the two named, and, perhaps, equal if not superior in point of utility to them, is the single Russian, which flowers in the autumn in the open ground, and through the winter if the weather be mild. This is, perhaps, the most popular of all the Violets; but, unfortunately, it is seldom so well cared for as the double ones, although from the fact of its supplying us with little bunches of Violets at a season

when they are not to be had elsewhere, it deserves more attention than it often receives. Some improved varieties of this have from time to time appeared, an extensive grower in the west of England having issued some new varieties of it. It is very accommodating, and is too often ill-treated in respect to the situation it is planted in. Its flower-stems are, however, short, as might be expected from its flowering in midwinter. Nevertheless, with this drawback it is exceedingly useful. I am not aware of a white variety of this kind, but it is not unlikely that there may be one, as there is a white amongst the wild ones which this much resembles.

Besides these there is an old pink variety, double and pretty but it lacks in a measure that agreeable smell which gives the Violet pre-eminence of everything—the Rose only excepted. There are some other subordinate varieties, but the above sufficient to give the amateur an idea of what they are, and also to enable him to cultivate them successfully.—J. R.

THE ROYAL BOTANIC SOCIETY'S SHOW.

MAY 13.

AFTER a long course of dry weather both farmers and gardeners were anxiously looking for rain, and they had their wishes gratified on the day preceding the Show, when rain fell in considerable quantity. The advent of rain, however, was not hailed by all with feelings of unmixed delight—plants had to be packed on the evening previous to the Show, and tarpaulin coverings for vans, and mackintoshes and umbrellas for man, were in great requisition, whilst dire was the consternation of many of the intending lady visitors at the prospect of a dripping wet day that would mar all pleasure, as well as sundry new silks with fine French names, as to the meaning of which we are in a state of misty uncertainty. But the fates were not adverse, for, with the exception of one or two heavy showers, there was nothing to detract from the enjoyment of one of the finest exhibitions which have been seen at the Regent's Park. The mass of colour which lay before the eye on entering the large canvas-covered space where the exhibitions are held was imposing; the green turf gave relief, whilst one was always discovering fresh beauties in nooks and recesses that had escaped the first glance. The Azaleas were superb, the stove and greenhouse plants splendid examples of skilful cultivation, and the more modest-looking Heaths generally well grown, as well as very attractive.

Of stove and greenhouse plants several excellent collections were brought forward for competition in the different classes. In that for sixteen Mr. Peed, gardener to Mrs. Tredwell, Norwood, had a fine evenly-grown *Tetratheca ericæfolia*, *Leptodactylon californicum*, *Leschenaultia biloba grandiflora*, *Aphelaxis sesamoides rosea* and *macrantha purpurea*, *Pimelæa spectabilis* and *decussata*, *Chorozema Lawrenciana*, *Franciscea confertifolia*, *Erica depressa*, two Azaleas, and some other plants, all of which were well grown. This collection was considered the best in the Amateurs' Class. Mr. Baxendine, gardener to W. Smallpiece, Esq., Guildford, came next; and among his plants were *Chorozema Henchmanni* covered with bloom, *Stephanotis floribunda*, *Rhyncospermum jasminoides*, *Hovea Celsi*, *Aphelaxis*, &c.

Other collections less numerous came from Messrs. J. & J. Fraser, of Lea Bridge; Jackson & Son, of Kingston; J. & C. Lee, of Hammersmith; and A. Henderson & Co.; and among amateurs from Mr. Green, gardener to Sir E. Antrobus, Bart.; Mr. Ingram, of Reading; Mr. Page, and Mr. Wheeler. Among these there were excellent specimens of *Leschenaultia intermedia* and *biloba major*, *Acrophyllym venosum*, *Boronia serrulata*, *Eriostemons*, *Polygala Dalmaisiana*, several Azaleas, the beautiful *Clerodendron Thomsonæ*, *Chorozemas*, *Erica Cavendishii* several *Aphelaxes*, *Rhyncospermum jasminoides*, *Hedera*, *Medinella magnifica*, *Labichea heterophylla*, *Allamanda grandiflora*, *Franciscea*, and some other plants which it would be tedious to particularise.

Azaleas, as already remarked, were superb, those of Messrs. Veitch and Mr. Green being particularly fine. Among the varieties exhibited by Messrs. Veitch were *Iveryana*, *Feltoni*, *Magnificent*, *Exquisita*, *Juliana*, and *Barclayana*; whilst Mr. Green had *Alba magna*, *Chelsoni*, *Glory of Sunninghill*, *Triumphans*, *Broughtoni*, *Juliana*, and *Magnificent*. *Arborea purpurea*, from Mr. Turner, was a mass of bloom; *Admiration Optima*, *Magnifica*, *Broughtoni*, and *sinensis* from the same

exhibitor were also very striking. Excellent collections also came from Messrs. Fraser and Lane & Sons.

In Cape Heaths, of which there were several fine collections, Messrs. Jackson had the best in the Nurserymen's Class. The kinds consisted of *Bergiana*, *depressa*, *fastigiata lutescens*, *ventricosa tumida* and *magnifica*, *fastigiata lutescens*, *florida intermedia*, and *tricolor dumosa*, all of which were handsome specimens. Mr. Rhodes, of Sydenham Park, was likewise a successful exhibitor with a fine *Erica Cavendishii*, *ventricosa coccinea minor*, *Victoria Regina*, and nice plants of several other kinds. Mr. Peed contributed large plants of *Cavendishii* and *florida*, together with *coccinea minor* and *depressa*, both of which were in beautiful condition. Mr. Page and Mr. Baxendine also came forward with well-grown plants, and were both successful in gaining prizes.

Roses in pots constituted a brilliant feature in the display, and as examples what can be done by pot-culture were everything that could be desired, the plants being of great size, healthy, and covered with bloom. Messrs. Lane and W. Paul in particular distinguished themselves, the former with Charles Lawson, Comtesse Mole, Baronne Prevost, Léon des Combats, Chénédolé, Souvenir d'un Ami (a remarkably fine plant), Paul Perras, Jules Margottin, Gloire de Dijon, and Coupe d'Hébé; and the latter with Sénateur Vaisse, Paul Ricaut, Lord Raglan, Madame de St. Joseph, and several of those already mentioned. Mr. Francis, of Hertford and Mr. Terry, gardener to C. W. Giles Puller, Esq., M.P., Youngsbury, likewise exhibited well-grown plants.

In *Pelargoniums* Mr. Turner, of Slough, took the lead with twelve large and handsomely-grown plants in eight-inch pots, and which were a mass of bloom. Fairest of the Fair in particular was lovely, and scarcely less so was Sunset. The other varieties were Ariel, Picnic, Virginie (Miellez), a glowing scarlet; *Desdemona*, *Empress Eugénie*, *Rose Celestial*, *Beadsman*, *Sir Colin Campbell*, *Candidate*, and *Lilacina*. Messrs. Fraser, coming in second, had in addition to several of those already named Mr. Marnock, Governor General, *Leviathan*, and *Osiris*; and in the Amateurs' Class Mr. Bailey, gardener to T. T. Drake, Esq., *Shardeloes*, and Mr. Weir, of Hampstead, showed nice collections.

Fancy varieties came from Mr. Turner, Messrs. Fraser, Mr. Bailey, and Mr. Weir; and many of the plants were of great diameter and literally covered with bloom. The principal varieties were *Arabella Goddard*, *Delicatum*, *Roi des Fantaisies*, *Acme*, *Queen of the Valley*, *Clemantine*, *Clara Novello*, *Modestum* (a charming variety), *Carminatum*, *Cloth of Silver*, *Negro*, and *Lady Craven*.

Cinerarias were not remarkable; indeed, several of the plants, as far as cultivation was concerned, were unworthy of exhibition. The best came from Mr. Lamb, of Southall, and Mr. Pointon, gardener to C. Perry, Esq., *Castle Bromwich*.

Orchids were shown in abundance, and among them were several fine examples of *Cattleya Mossiae*, *Lycaste Skinneri*, *Phalænopsis amabilis* and *grandiflora*; *Saccolabium guttatum*, *refusum*, and *præmorsum*; *Cypripedium barbatum*, and other species; *Vanda tricolor* and *suavis*; numerous *Ærides*, *Dendrobiums*, and *Oncidiums*; *Lælia purpurata* and *Bryasiana*. A fine pan of *Orchis foliosa* from Mr. Bullen was, however, one of the most remarkable. The principal exhibitors of this class of plants were Mr. Baker, gardener to A. Basset, Esq., Stamford Hill, who took the highest position for a collection of twenty species; Mr. Bullen, whose plants were also fine, but in ugly, open-sided tubs; and Messrs. Page, Wooley, Peed, Smith, of Syon, and Wiggins, of Isleworth.

Collections of mixed flowering and fine-foliaged plants came from Messrs. A. Henderson & Co., and Lee, and exotic and British Ferns from Mr. Lavey; Miss Clarkson likewise bringing forward a good collection of the latter.

Of cut flowers there was a plentiful display, especially Roses, of which beautiful masses were contributed by Messrs. Lane, Paul & Son, and W. Paul; the last showing among others, Lord Macaulay and Lord Herbert, two new varieties of great merit.

Stands of Pansies came from Messrs. Downie, Laird & Laing, Turner, Dean of Bradford, Shenton, August, and James; of Verbenas, from Mr. Treen, of Rugby, and Mr. Turner, who had also Tulips, and several pots of President Strawberry.

Of miscellaneous objects, decidedly the most interesting was *Napoleona imperialis*, a flowering branch of which was sent from Syon. Mr. Bull brought a large collection of new and rare plants, including the extremely curious *Pogonia discolor*, *Areca*

dealbata, and others which will be noticed in another column. Mr. Standish had two beautiful Clematises, one of them having double white flowers of very large size; has been provisionally named *C. Fortunei*; the other, which is single and of fine violet hue, has been named *Clematis florida Standishii*. Both of these are decided acquisitions. Mr. Turner had Louise Von Baden, a beautiful white Azalea; Mr. Holland, a very superior white and magenta *Petunia*, called *Royalty*. Messrs. Veitch had *Ourisia coccinea*, the crimson flowers of which were very effective; *Rhododendrons* Mrs. Buller and Princess Alice, the lilac *Stenogastera multiflora*; *Browallia Jamesoni multiflora*, from Ecuador, with numerous orange-yellow flowers; and a *Melastomad* called *Melastoma (?) argyoneura*, with very ornamental rugose olive green leaves, which promises to be a great acquisition. Besides the above there were several seedling *Pelargoniums* shown by Mr. Turner, and Mr. Hoyle, of Reading.

AN ORCHARD-HOUSE IN THE HIGHLANDS.

THE following note from a gentleman who, in conjunction with, doubtless, a clever gardener, manages his orchard-house well, will, I trust, prove interesting to your numerous readers.—T. R.

"Dear Sir,—

"Perthshire, May 1, 1863.

"I observe a great discussion going on in THE JOURNAL OF HORTICULTURE as to the merits of orchard-houses. I have never wished to draw myself into the contest, and have, therefore, kept clear of it; but I think it is in justice to yourself to say that from seeing your houses at Sawbridgeworth and their success there, that I was induced about six or seven years ago to put one up, and I may safely say I have never regretted having done so. I have always had first-rate crops, and that without any fire heat and in a cold climate. Last year, notwithstanding the inclemency of the season, I had a most splendid crop of Peaches, Nectarines, Figs, Grapes (Black Hamburgs), Tomatoes, and Capsicums, to say nothing of the most beautiful Strawberries of the highest flavour, and finer than any we can grow out of doors. The earliest ripen about the 15th to 20th of May, and with successions of later kinds last till the out-of-door crop comes on about the end of June or beginning of July. A gentleman who is a judge of fruit tasted some of my orchard-house Peaches, and pronounced them superior to any he had ever tasted off a wall. Many of them measured over 9 inches in circumference. This year my trees in pots are again loaded with fruit, and are perfect pictures of health and beauty. The average crop I allow is two dozen each tree.

"To show the great advantage of glass without fire heat in a northern climate, my Vines this season were as far forward on the 15th of April as I observed them in the vineyards in the Island of Fano, near Corfu, on the same date of which I have a note.

"I may state that my orchard-house is 50 feet by 15, a lean-to, with brick wall at back and terraces; the Figs and Vines being on the upper terrace and next the wall.—PERTHSHIRE."

FLUES VERSUS HOT-WATER PIPES.

In your Number for the 5th, at page 326, "J. E. L., Jun.," and Mr. Thomson at page 330, call in question the correctness of my statement in page 211 on the above subject. I might have been more explicit, but fearing to take up too much of your valuable space I was as brief as possible. The length of my flue is 15 yards; the cost per yard, 3s. 0 $\frac{1}{2}$ d., as follows:—750 building-bricks and mortar, and labour, 26s.; fire-brick covers, 20s. My flue required no foundation, it being built on the solid; and although I stated my flue was 12 inches deep, yet near the furnace it is only 9 inches, allowing a rise at the further end of 6 inches, or 15 inches deep. Taking the middle depth 12 inches, only allowing a depth of flue 9 inches, filling up the space with rubbish; the heating surface of my flue is as much as can be, being both sides and top. Any circulation of air underneath the flue, as "J. E. L." recommends, would be injurious rather than useful, as the soot and dust settling in the bottom prevent any heat getting through the tile, and would be very much more likely to leak at the joints through settling or other causes, and would not be at all firm, and be also costly and useless. My article at page 211 was written to show the difference of cost of the two plans: consequently, I only gave the cost of flue. The furnace, the bars, and door would be about the same as required.

for boiler, less of either. My chimnies are built in the back wall of the house. I think "J. E. L." would have some difficulty in keeping up a proper heat in a house 40 feet by 15, with only a flow and return pipe of three-inch water-piping. Neither does he state cost of stays for his piping, which are always costly. In further reply to Mr. Thomson, page 330, the above will answer his question of furnace-bars, &c. Dampers are great evils in greenhouses or vineries, causing leakages in flues, &c. From the annexed drawing he will see arches are unnecessary,



A Flue.
B Border for Vines inside house.
C Border outside the house.

D Three-inch space between flue and border to keep Vine roots from the hot flue.

as the Vines when they have filled the space inside the house may find nourishment outside. If I were building a house 110 feet long, I would build furnace, flue, chimney, and all at £10 less cost than Mr. Thomson estimates.—E., *Burton-on-Trent*.

A GOOD BOILER.

IN replying to Mr. Robson's question for particulars of a good boiler, I imagined that I had given sufficient details to enable him to judge of the capabilities of my Truss boiler; and I am sorry that I did not give a more explicit detail, which I should have done had I properly contemplated the probability of appearing in print.

I cannot possibly estimate the cost exactly, as the summer work was almost entirely performed by the refuse and cinders from the house. For winter work, as a greater heat and quicker circulation were required, I have been obliged to use coke, and from October the 23rd to the end of April I have consumed eight chaldrons, and the cost has been for twenty-seven weeks about 4s. 4d.

The cubical contents of the different structures are about 5600 feet, and it has heated a small stove, greenhouse, conservative-house, and an open-air tank, and with heat to spare. My boiler has to work under many disadvantages, as the main flow and return between the boiler and into the upper house, including the perpendicular rise of about 12 feet, are only two-inch pipes, and there are so many turns and returns necessitated by my various contrivances that I have no hesitation in saying that three times the amount of work could be done in a range of houses on level ground, and for an amateur no boiler can be more satisfactory. I have often lighted the fire myself—in fact, I think that I can do it even better than my man, and in less than an hour the return-pipe to the boiler shows a rapid circulation.

I observe that the printer made a slight error in calling one of the divisions of the upper house a "coach-house," which will appear curious to some of your readers. It should have been "Cactus-house."—C. M. MAJOR, *Cromwell House, Croydon*.

PROFUSION OF STRAWBERRY BLOOMS.—My gardener told me a few days ago, that he had mentioned to some friends that he thought some of my Strawberry plants last year had as many as three hundred fruit-blossoms on each plant, and that his friends had laughed at the assertion. I at once took my gardener to the Strawberry-bed (composed of several kinds), selected a moderately fair-looking plant in full bloom, and on

counting the blossoms found that there were four hundred and twenty-eight! I have no doubt that I have plants with five hundred blossoms. I merely mention the above in case you should think it worthy of notice.—J. H., *Binstead, Isle of Wight*.

HEATING GREENHOUSES.

THERE is not the least doubt but the hot-water system is the best when there is much glass to be heated; but for an amateur who has a greenhouse, say 14 feet by 10 or 20 by 12, I certainly think that nothing can be better than the ordinary flue or pipes. I have a house (a lean-to), it is 14 by 9, 10 feet high at back, and 5 feet in front. It is heated by means of a furnace which is entirely inside (the door of the furnace of course being outside), so that every bit of heat is in the house. There are 2 feet of brickwork from the furnace, and into the end of this brickwork the first stone glazed pipe is placed; then follow the other pipes, which run along the back and out into a chimney at the other side of the house. The joints of the pipes are mortared. On the top of the brickwork I place a wooden tray 2 feet square, 3 inches deep, filled with coal ashes, on which I forward different things for spring cuttings and also seeds. *Calceolaria* cuttings will strike very fast in December and January—much better, in fact, than in July or August.

When the fire is lighted, I always find the pipes are warm in about five minutes, and in half an hour the house is quite comfortable. It burns but little fuel—even in the most severe winter a half-cartload of breeze will be quite sufficient, and it will keep in from ten at night till seven in the morning. Cost of bricks and mortar, 2s.; furnace ironwork, 5s.; seven glazed six-inch pipes, 4s.; total, 11s.

The pipes if cleaned well out in September, will go till September again without requiring a second cleaning.

If you think this heating account worth noticing in your Journal, no doubt some of our amateur friends may be induced to try my plan, which will no doubt answer their purposes quite as well as it answers mine.—J. B.

[Perhaps your estimate is fully low enough; but you just confirm Mr. Robson, and Mr. Fish in "Doings of the Week," that small solitary houses are cheapest heated by flues. Of course, they too will be expensive if built on raised arches and all the rest of it, with huge tiles for bottoms. For a little greenhouse we should do as you have done; or, if bricks all round, we would have a good concrete bottom on a hard earth bottom, two bricks on edge, and a nine-inch tile on the top. We thus heated a small house by running a small flue 6 inches wide below a floor, the tiles covering forming part of the floor; and it cost little more in shillings than a gentleman offered to do it for by hot water in pounds. In speaking of the cost of hot water, and also of flues, everything should be stated. For instance: if we go to one of our advertising emporiums, select a boiler, suitable pipes, &c., and put it up with our own men, the expense must be and ought to be different from bringing men from a distance to do the work.]

THE USES OF AN ORCHARD-HOUSE.

IT may be interesting to some of your readers to know the routine of culture that has been observed in a house erected by me here some twenty years ago, and which may be said to be the prototype of Sir Joseph Paxton's recently patented "Hot-houses for the Million." My house is 50 feet long, 14 broad, 7 high, and is span-roofed, facing east and west, the ends of course north and south, and it is properly heated with hot-water pipes.

The house is planted with Vines and Peaches planted inside close to the wall-plate a foot only from the ground. These are trained in the ordinary way on trellising of wire. But besides these I grow various other descriptions of garden produce. I first plant dwarf Peas, sow Lettuce, Radishes, and Onions; plant Asparagus, Sea-kale, and Rhubarb, and introduce Strawberries on shelves, the sorts I grow being Keens' Seedling and British Queen. As all these things grow they begin to occupy a large amount of space; but as some require to be consumed, and the Strawberries when set require greater heat, and as the foliage of Vines and Peaches becomes too full for the latter, I take out all my Strawberries, regard being had to their being well set, into the vinery, where they swell and ripen well. As soon as my green Peas are nearly or quite over, my Kidney Beans, first brought forward in

60-sized pots, are planted-out in the usual way where the Peas have performed their office, and by this means I have a much earlier crop than I should have done out of doors. The Beans will not be too much shaded, but bear well. Having disposed of them, my next proceeding is to introduce Melons in the common soil of the house, and as long as the sun shines with sufficient force I gather sweet Melons. I have seen them in the fields in Italy, and conceived that with the atmospheric heat of our vineries the soil would be equally warm; and I have succeeded without any other stimulus. Cucumbers grow too fast. I have introduced Mushroom spawn, but obtained few, and I may say I have failed there, and I do not know how it was. I will add, I have succeeded with Figs and Oranges in pots, as they both love a little shade.—JOHN STOVELD, *Stedham Hall, near Midhurst.*

WHAT FLOWERS THINK OF IT.

A DIALOGUE BETWEEN MR. HOLLYHOCK AND MISS ROSE.

HOLLYHOCK.—Well, Rose, do tell me what is going on over there. Since Mr. Cuttings banished me from the border I can see and hear nothing. Summer's coming, though, and then you know eight feet o'ertops the fence by two—unless, oh! horror of horrors! that man decapitates me for exhibition!

ROSE.—Well, stately old friend, I wonder not at your annoyance, once the glory of the flower garden, and now in durance vile beneath this gawky fence; but we all have our troubles. There was a time in which I was held in higher repute before these bold spindle-shanked hybrids were all the rage, sticking their gaudy tops above the heads of the dear children. Well, there's a grand display on the parterre, as they call it, a geometrical digging (copied from the panels of the hall-door, so a bird told me), filled with—what do you think?

HOLLYHOCK.—Perhaps Roses, and Hydrangeas, and Lilies, Agapanthus, Carnations, Pinks, Dianthus, Primroses, Wall-flowers, and Pansies.

ROSE.—Oh, no! you speak of times gone by, when the borders were always new, from Christmas Rose to Chrysanthemums—right out of Winter's snow to Autumn's golden leaf—"a thing of beauty and a joy for ever."

HOLLYHOCK.—Well, what? Do tell me, Rose.

ROSE.—Prepare yourself for the worst, my dear old friend. Each bed is filled with the same sort of flower, all huddled so thick together that not a bit of the rich black mould can be seen, and the plants so crowd each other that all form and contour are lost.

HOLLYHOCK.—But what, friend Rose, do they plant in this way? Only mean things whose foliage in colour and form is a disgrace to them.

ROSE.—Well, no. Scarlet Geraniums for one thing—great blazing patches of blood-red, whose fiery hues lend a double fervency to the dog days, and then ere the second frost are a black putrid mass.

HOLLYHOCK.—Why, what does the squire think?

ROSE.—Oh! I think he's sickening of the new-fangled notions. The houses crammed full of "bedding stuff," as they call it, half the year; and the trouble and fuss of coddling the precious cuttings from September to May.

HOLLYHOCK.—Well, I thought that was the squire's opinion. Last summer he came this way frequently, and he did me the honour once to say that I am "a grand old flower still." Of course, I made him my stateliest bow. But what of the lady? Does she take as much delight in it?

ROSE.—Oh, no, who'd go walking among a lot of nursery-beds, between long rows of Tom Thumbs, and weedy Verbenas, and Calceolarias? Why, it would be thought madness. The parterre is not meant for close inspection, 'tis to be seen only from particular points—the drawing-room windows or the corner of the terraces, for instance. No, they don't go nearer or the design is lost! It's a great showy advertisement, a sham, a monstrous violation of common sense, and as such must be in direct opposition to good taste. Who cares to linger and stoop over great patches of scarlet, and yellow, and blue—scarlet, yellow, and blue *ad nauseam*?

HOLLYHOCK.—Hurrah! but this is not only pandering to the rage for display, this sensation gardening, but it is bringing disgrace and ruin upon the gentle craft. Gardeners may talk of skill in arranging colours, and be mysterious about harmonies and management of bedding stuff, or twaddle about edgings,

and ribbons, and pincushions, and "beds to match;" but the public are getting tired of the thing, and will come back ere long, I think, to ask our help. What think you, Rose?

ROSE.—Well, friend, you're warm somewhat. The flowers I see are brilliant in colour and some of elegant form, 'tis true, though tender things, and not well fitted for our climate; but 'tis the planting that's mainly wrong—this system of massing, as they call it.

HOLLYHOCK.—Yes, yes; but they're mean dwarf things generally, and cannot stand our climate. Why, the beds are bare above six months in the year!

ROSE.—Yes; but you forget the brilliant idea of clinkers and broken glass, and many-coloured stones!

HOLLYHOCK.—At which our squire is gravelled.

ROSE.—And evergreens. But who cares for the parterre? Why, all our squire's family rush along this way. How eagerly they run to Will Haylock's cottage garden, and beg a bunch of Wallflowers, Cloves, and Honeysuckles, and now and then a sprig of his crimson China.

HOLLYHOCK.—Which Mr. Cuttings pooh-poohs, no doubt. Well, well, this is but the opposite extreme. I once had the honour of being staged at Sydenham, and was heartily ashamed of myself, leaning for support like a drunken soldier. The idea of a Hollyhock's head stuck in a potful of sand to be gazed at and admired was only on a par with the barbarous custom of clipping and shaving trees. But what was still worse, a pettifogging fellow came with small bone tweezers, and pulled out a leaf here and there, and exchanged another until you would scarcely have known me. Florists, you know, have laid down rules for our growth, and have actually drawn figures of what we ought to be! Hush! here are the squire and all the family this way again; how soon they tire of their parterre! Mr. Cuttings has it all to himself.

ROSE.—Yes, old friend, they'll soon replace us, if I mistake not. Hush! let's hear what they say.—T. W., *Harrow.*

LARGE CAMELLIAS AND ORANGE TREES.

It may interest some of your readers to know that the finest collection of Orange trees, and of large Camellias in Europe, is to be sold this week, and so large is it, that the sale will probably continue until Saturday. They are the property of M. Henri Courtois, who is giving up his business, in the Rue de la Muette, near Père-la-Chaise. The Camellias are some of them sixty years old, and are mostly planted out in a large greenhouse, and look in vigorous health. The sorts, of course, are old. The Orange trees are some of them very fine, and are all in tubs. Their selling price now varying from 200*l.* (£8) a-piece down to 30*l.*, and although the dust of Paris has not improved them, yet they are in fine health, and I have no doubt with more care would soon make noble trees. The constant increase of Paris, and the demolitions consequent upon it, are by degrees driving the nurserymen away. We believe one—the main reason—for the collection being parted with, is the injury that is done to plants by the rapidly increasing buildings round them.—D., *Deal.*

GRAFTING THE WILD OLIVE ON THE OLIVE.

REFERRING to Romans xi. 17, the wild Olive tree being grafted in and partaking of "the root and fatness of the Olive tree," or parent stock, I have heard it stated that in this respect the Olive differs from plants we usually graft; but cannot find any allusion to the alleged peculiarity. Can you give any information on the subject?—S. D. GOFF, *Horetown House.*

[The words of St. Paul as rendered in our translation are, "Some of the branches be broken off, and thou, being a wild Olive tree, wert grafted in among them, and with them partakest of the root and fatness of the Olive tree." This is explained two ways, either of which seems satisfactory. Schleusner, quoting from older writers, renders *agratelaios*, the Greek original, "unfruitful Olive tree," instead of "wild Olive tree," and then it is like many other unproductive fruit trees which are brought into bearing by grafting scions from them on other stocks.

The other explanation is that *agratelaios* is the Oleaster or *Elaeagnus*; and Schulz, in "Paulus's Collection of Travels," states that branches of it are grafted into Olive trees that are barren though cultivated, in order that fruitfulness may be pro-

cured. Theophrastus, Pliny, Columella, and Palladius all mention this fact, but it will be sufficient to quote the two last-named. Columella says—"It often happens although the trees are vigorous that they produce no fruit. Let these be bored with a Gallio augre, and a green graft, or slip, of a wild Olive tree be put into the hole; thus the tree becomes more fertile."—(De Re Rustica, l. 5, c. ix.). Palladius, in his poem on "Grafting," l. 53-4, says, "The wild Olive renders fruitful the barren Olive, and teaches that to bear which knew not how."

But our translation, taken literally, has no obscurity; for it only alludes to the fact that the Gentiles were now admitted to all the privileges previously confined to the Jews, just as the scion of a wild Olive would partake of the sap (fatness) supplied by the root of the cultivated Olive if grafted upon it.]

THE BIRMINGHAM ROSE SHOW FOR 1863.

We last week drew attention to the fact that the prize list for the next Show is now ready, and may be had on application to the Secretary. We have since carefully examined the prize list, and have much pleasure in submitting to our readers a summary of its contents.

As was the case last year, there are three classes. Class A is for Nurserymen. Nos. 1, 2, and 3 (for 96 varieties, singles; 48 varieties and 24 varieties, trebles, respectively), are open to the United Kingdom. No. 4 (24 varieties, singles), is open to nurserymen resident in the counties of Warwick, Worcester, or Stafford only.

Class B is for Amateurs. Nos. 5, 6, 7, and 8 (48, 24, 18, and 12 varieties, singles, respectively), are open to the United Kingdom. Nos. 9 and 10 (12 and 6 varieties, singles), are open only to amateurs resident within fifteen miles of Stephenson Place, Birmingham; and No. 11 (6 varieties, single), is open only to amateurs resident within three miles of Stephenson Place, Birmingham.

Class C is entirely open. It consists of five divisions. No. 12 is for a collection of not exceeding 24 new Roses of 1860-61-62, single trusses; No. 13 for the best new Rose, 1860-61-62, six trusses; No. 14, best six varieties, Roses, single trusses, with stem and foliage as cut from the tree; each truss to be shown singly in a vase to be supplied by the exhibitor. No. 15 is for the best design, basket or vase, of Roses and Rose foliage; and No. 16 for the best bouquet for the hand, entirely of Roses and Rose foliage. It is added as a note to No. 16, that it is essential for the bouquets sent to be suitable for the hand—a much-needed regulation, for usually the bouquets sent are large enough to make half a dozen hand-bouquets of the proper size.

It will be seen that some considerable changes have been made in the prize list as compared with the one issued for the Exhibition held last year; and we are inclined to think that the changes will be also found improvements. The Committee were evidently guided by principle in framing their bill of fare for the year, and we are of opinion that experience will prove that they have been guided by correct principle. While making the prize list in its main features thoroughly unrestricted, so as to induce exhibitors from all parts of the kingdom to join in the competition, some very sensible reservations have been made. These are to encourage local exhibitors to do their best, not but that as far as we can judge, all circumstances considered, the midland counties succeeded in maintaining a very honourable position, even when in hand-to-hand fight with such successful veterans as Turner, Paul & Son, Cant, Francis, and Keynes, who were all prizetakers at last year's Show. We find there were at that Show exhibitors from thirteen counties—viz., Berks, Bucks, Essex, Gloucester, Hereford, Hertford, Leicester, Monmouth, Nottingham, Oxford, Somerset, Warwick, and Wilts. Including extras thirty-three prizes were awarded, and they went in the following proportions to the various counties named below:—Berks, 1 prize; Bucks, 5; Essex, 3; Hereford, 1; Hertford, 5; Leicester, 1; Monmouth, 2; Nottingham, 3; and Warwick, 9. At the same time the limitations of Nos. 4, 9, 10, and 11, will bring out many small growers; and the proper cultivation of Roses in suburban gardens—one of the objects which induced the establishment of the Show—will receive a desirable amount of stimulation.

The endeavour to get exhibitions of Roses grown within three miles of the centre of Birmingham will, we hope, prove very successful. That there are many residents in the immediate suburbs of that and other large towns who are true

subjects of the queen of flowers is undoubted; but that there are at present many successful growers of Roses within three miles of the centre of any town so large and smoky as Birmingham, is, we fear, not very probable; but if the competition in this division should be limited it will not long continue so. The Committee of the Rose Show having offered prizes for a small number of varieties grown within a short radius of the central railway station will naturally increase the number of growers, and the names of the varieties shown in the winning-stands will be read with interest by all small cultivators residing near large towns, as the names of those kinds which they may successfully grow in such unfavourable localities. We would draw particular attention to division No. 14 in the Open Class, as one which we hope to see well filled: it is for the best six varieties of Roses, single trusses, with stem and foliage as cut from the tree, each truss to be shown singly in a vase. Last year the six trusses were shown together as a bouquet; but the plan for the present year will, we think, be found a great improvement on that, besides adding several features of interest to the Exhibition. The regulations seem to be much the same as last year, only such slight alterations having been made as the experience gained by the first Show has suggested. The amount of prizes offered is £106 5s., an increase of more than £20 on the amount paid last year; and in all cases there are to be first, second, and third prizes—liberality which we hope will meet with a hearty response from all the leading cultivators.

CHINESE FRUIT-GARDENING.

MR. FORTUNE, in his pleasant book "Yedo and Peking," mentions, page 321, the Chinese method of cultivating fruit trees in pots which he observed in the nurseries near Tien-tsin:—

"Pears are perhaps the most abundant amongst all the autumnal fruits in Peking. They are exposed for sale in every direction—in shops, in stalls, on the pavement as well as in the basket of the hawker. They were of two or three kinds, and one of them was high-flavoured and melting. This is the first instance of a Pear of this kind having been found in China, and it is a most welcome addition to the tables of the foreign residents in Peking. Curiously enough this fruit, excellent though it is, is as yet unknown at Tien-tsin, a place only about seventy miles distant."

"Apples, Pears, and Siberian crabs are cultivated in pots in these gardens, and apparently with great success, for the little trees were all loaded with fruit. The Chinese have, probably, been doing this for ages past, just as they have been growing Roses in pots, dwarf and covered with bloom, while we have only found out very recently that such things could be done."

It is really true that we have only recently "found out" that such things can be done, and it is not to be wondered at that English gardeners, like English agriculturists when threshing machines were first introduced, should feel that "such things" are innovations, and to be opposed accordingly. Mr. Fortune also describes standard Chrysanthemums grafted on a species of *Artemisia*. Unfortunately, he has omitted to give the species, or to say if he has introduced it. We have, as far as my knowledge goes, no hardy shrubby *Artemisia* fit for a standard stock for Chrysanthemums.—YEDO.

THE TOAD.

YOUR correspondent, Mr. W. Earley, asks, "Does the toad habitually consume worms?" I have two toads, one in each of my Cucumber-frames, which I placed there for the purpose of destroying woodlice, &c.; and now that the woodlice are reduced to "few and far between," I, as a rule, feed the toads four or five times a-week with live worms. I merely place the worms on the ground before them, when, as soon as the worms move, the toads quickly devour them, but never till they move; nor do they touch any kind of food till it moves.—THOS. AUSTEN, *Askford*.

NATURAL HISTORY.

A BALDCOOT was seen with eight young ones on the 23rd April.

WILD Pheasants were seen with young ones on the 5th of May.

CALCEOLARIA TETRAGONA.

POSSESSING considerable beauty in itself, this shrubby species of Slipperwort may effect that improvement in the worn-out garden Calceolarias which the Cape species of Pelargonium brought about in the case of the enfeebled florists' breed of this latter popular flower. If its properties can at all be brought to bear upon the domesticated Slipperwort, we may yet hope to see

some of their acquired beauty of flower united with a vigorous constitution and good habit of growth. *Fig. 1.*

The species was introduced from Peru by Messrs. Veitch, of Exeter. It forms a true shrub with a compact and dwarf branching habit of growth, and bears oblong-ovate blunt entire leaves. The flowers, which form loose corymbs at the ends of the stems,



are large, with a pale-green calyx, and the lower lip of the corolla forms a broad squarish pouch of a pale yellow colour.

The habit of this Slipperwort being all that can be desired in an ornamental plant, and being accompanied by clean-looking, ample, shining foliage, and numerous showy flowers, the form of which, though not exactly agreeing with the artificial "cherry-bob" standard, is not at all inelegant, it is to be hoped that

some persevering hybridisers will by its aid, revivify the Calceolaria as a garden flower.

Like the other shrubby species of Slipperwort, the present may be increased readily by means of cuttings of the young shoots; and the plants will grow freely in a mixture of equal parts of turfy loam, peat, and leaf mould. It, of course, requires greenhouse protection.—M.—(*Garden Companion*.)

DEATH OF MR VEITCH, OF EXETER.

It is our mournful duty to record the death of Mr. James Veitch, of Exeter, which took place on the forenoon of Thursday last, the 14th inst.

Only a week previously Mr. Veitch sustained the loss of his wife, who was buried on Thursday last; and it was on the day of her funeral that Mr. Veitch, overwhelmed with grief for one

he loved so much, was seized with spasms of the heart, and after two hours' suffering, expired in the arms of his eldest son, Mr. James Veitch, of Chelsea.

The father of Mr. Veitch was a native of Jedburgh, in Scotland. At the end of the last century he came to Devonshire, where he ultimately established a nursery at Killerton, near

Exeter, and there the subject of this notice was born on the 25th of January, 1792. So great was the success that attended the formation of this nursery that, in course of time, Mr. James Veitch, finding the distance too great from Exeter, and desiring to be nearer that city, purchased a large extent of ground on the Topsham Road, known as Mount Radford, and there were formed those beautiful nurseries which are now so closely identified with the botany and horticulture of the nineteenth century.

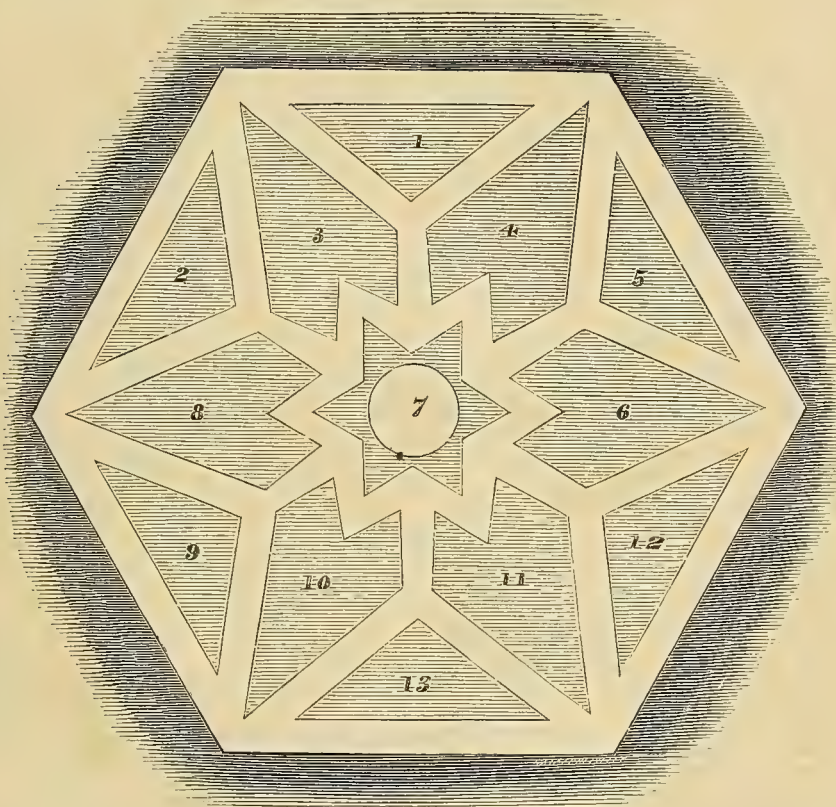
It is almost unnecessary for us to enter into any particulars about this and the kindred establishment at Chelsea, which is presided over by his eldest son, Mr. James Veitch. Our readers and the public are too well aware of the extent and importance of both to require any special notice on this occasion. Suffice it to say that Mr. Veitch has left behind him a name which will rank high in the annals of horticulture.

GEOMETRICAL FLOWER GARDEN.

THE situation of the design is on a small grass plot at the back of my house, two-thirds surrounded by a low rockery, the remainder by a belt of Rhododendrons and Azaleas, and the dining-room window looks down upon it. Ornamental Minton tiles are used as an edging for the beds; and the walks, 18 inches in width, are covered with fine white spar. On making the

design, I had originally intended to use coloured gravels instead of beds; but I changed my mind, and it has been filled with spring-flowering bulbs, and the effect has been generally admired.

Which of the following plans of planting do you prefer?—AN INQUIRER.



PLAN No. 1.

- 1 and 13. Snowflake Verbena.
- 2 and 12. Purple King Verbena.
- 5 and 9. Defiance Verbena. [nium.
- 3. Scarlet Horseshoe Gera-
- 11. Tom Thumb Geranium.
- 10. Calceolaria Aurea flori-
- bunda.

- 4. Ditto Prince of Orange.
- 6. Bijou Geranium.
- 8. Golden Chain or Cloth of
- Gold Geranium.
- 7. Prince Albert Petunia,
- with white Petunia in
- centre.

PLAN No 2.

- 1 and 13. Same as last.
- 2 and 12. Ditto ditto.
- 5 and 9. Ditto ditto.
- 3. Ditto ditto.
- 11. Ditto ditto.
- 10. Ditto ditto.
- 4. Ditto ditto.

- 6. (Christine) pink Gera-
- nium.
- 8. Prince Albert Petunia.
- 7. Centre with plants of Cine-
- raria maritima, points
- with Crystal Palace
- dwarf crimson Nastur-
- tium.

[If you adopt either of your modes of planting, we do not think anybody would find fault with you; but we suppose you will not owe us any thanks if we do not propose an amendment. Well, then, considering that your walks are a white spar, we think there is rather too much white in the beds, and it will be mostly in a line from the house, as 13, 7, 1. Now, we like your idea of 7 shutting out the white by pink from the walk, but we do not think that Petunias will suit you with their rambling propensities in such a garden. Our first suggestion then is, that the centre of 7 should be white Verbena, and the corners of the star of such a puce or purple, as Charwoodi and Christine Verbenas, &c. Then we would centre 1 and 13 with Cloth of

Gold and Golden Chain Geranium respectively, with a band of Lobelia speciosa—that is to say, if we did not make the whole beds of Lobelia. Then 8 and 6 we would fill with Bijou, with a border of Christine, and the rest as stated, or 8 and 6 might be Christine, with border of Elegans Crystal Palace Nasturtium. We would prefer the first, as the fine green leaf of Christine will come in well with the spar, and the centre of the beds being white, green, and scarlet, will light up that part well. We do not say that our plan is better than your own, but we think it would be an improvement; and however planted we should like much to see it, as if the beds are well managed the picture will be a pleasing one.—R. F.]

THE BEST BOILER FOR HEATING HORTICULTURAL STRUCTURES.

FOR several years past I have had the care and management of sundry kinds of boilers, and I have no hesitation in saying that the upright tubular boilers are the most powerful and effective. It is a well-known fact that hot water will flow much faster in a vertical tube than in one laid horizontally; and although this is the case, most of the upright tubular boilers have horizontal firebars, and only one communication between them and the boiler. I think this plan defective. I think there ought to be as many communications as possible, and this should be direct; for I am quite certain there is in a red hot furnace a most intense heat upon the tubes over the fire, and the faster the water can circulate out of them the better.

Twelve months ago last March my employer had the vineries and conservatory refitted with new boiler and piping. All the Vines were taken out of one house and replanted. Mr. T. C. Clarke supplied the heating apparatus and piping. It was suggested to have a £20 saddle boiler, but as Mr. Clarke stated that his No. 1 boiler would be sufficient, the cost of which would only be ten guineas, I thought we could not do better than have it; but certainly, when I saw it being put in, I feared it would be scarcely large enough to heat one house instead of four. We have three vineries about 65 feet long by 16 wide, and seven rows of pipes in each house; then we have a conservatory to which the mains from the boiler are connected, about 30 feet from the vineries, which is about 55 feet long. I suppose altogether there will be from 600 to 700 feet of piping, and I feel certain, if it was required, in the course of an hour I could get the water to nearly a boiling heat throughout all the pipes.

I have now had this boiler at work better than twelve months, and I have no hesitation in saying that it is the easiest boiler to manage I ever had to do with. The two great improvements effected in the construction of this boiler are the water-jacket furnace, which is of great strength, and a simple ingenious invention, placed over the top of the boiler to keep in the heat. This is effected by means of two slides fitted on each side of the plate, called the deflecting flue-plate, which can be opened or shut at pleasure. When closed the heat is kept in close contact with the boiler. In most of the other constructions I have had to do with the damper has been placed some distance from the boiler; consequently, much of the heat passes into the flue, whereas, if it were cut off close to the boiler, it would be kept at the boiler.

I also consider this boiler the most economical one I ever had. A gentleman stated the other day, who has one the same size as mine, that he had a range of houses, about 70 feet in length by 15 wide, consisting of a stove, one vinery, and two greenhouses, that two tons of common gas coke had lasted him since Christmas. This at 6s. 8d. per ton would only be 13s. 4d. for the whole winter. Common gas coke suits these boilers best; but they will almost burn anything.

There is another excellence in these boilers—they never get choked up with soot. There are two small soot-doors in front for cleaning the flues out occasionally; but they do not require it more than once in two or three months. I should recommend No. 2 boiler for this reason—it holds more fuel than No. 1. It has been lately fixed up in this neighbourhood, and is heating 1200 feet. Mr. Perring, the head gardener, states that it does its work very satisfactorily; and I believe he is a good judge. He is one of the oldest members in the Horticultural Society, and one of the growers of the finest Grapes in the country.—*R. CARMYLE, Gardener to J. Robinson, Esq., Toxteth Park, Liverpool.*

THE DISEASES OF THE LARCH.

PRIZE ESSAY, BY JOHN MORRISON, CONEY PARK NURSERY, STIRLING, IN THE "TRANSACTIONS OF THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND."

THE failure of the Larch in this country cannot but be viewed as a serious matter, and deserves the attention of all who are in any way interested in growing the tree or using the timber. Larch has become almost indispensable for certain purposes, and we have no proper substitute for it. Its rapidity of growth, and the durability of its timber, gave it considerable commercial importance, and any curtailment of the necessary supply would not only be generally felt to be a great inconvenience, but, in a

money point of view, a heavy loss. It was supposed by some that the Deodar (*Cedrus deodara*), would in a few years become the rival of the Larch, the Deodar being also of quick growth, and its wood of excellent quality; but the effects of 1860-1 winter's severe frost upon this plant will be an obstacle to its introduction into the market for many years to come. In these circumstances, I consider it to be the duty of every person having a practical knowledge of the habits of the Larch, or who has watched the progress of the disease from its first appearance in the young plants, to state his views for the information of those men immediately concerned in the cultivation of the tree. And I beg respectfully to submit the following statement as the result of actual experience and observation, not being aware that any one has taken the same view of the case while treating of this subject.

In reference to the soil most suitable for the growth of the Larch, there is considerable difference of opinion. Although a good medium loam with a dry bottom is that best fitted to bring the timber to perfection, yet for the first twenty or thirty years the trees appear to thrive equally well on strong loam or poor gravelly land. After attaining that age, the result appears to tell more in favour of the loam; and I believe the finest specimens of the Larch in the north of Scotland are to be found growing on the edge of a moss or bog. Nevertheless, in almost every variety of soil we hear of the disease lurking.

If we examine the effect of situation in connection with soil, although it is found that in some localities a southern or western exposure is most agreeable, in other places the trees do well in an eastern or northern situation; so that there seems good reason for believing that soil and situation have comparatively little, if indeed anything, to do with the prevalent failure of the Larch.

To what, then, is the disease attributable? In tracing the history of the Larch from its introduction into this country in the beginning of last century, we may safely conclude that as much care and attention would be bestowed on its cultivation as is now given to that of our more recent and expensive introductions of the Conifers, and under such management no symptoms of decay appear to have manifested themselves; but when the quality of the timber became known and appreciated, immediately greater breadths of land were planted, and in very many cases, I am afraid, without suitable preparation or care, either as regards proper selection of seed, draining, or thinning; and to this heedless system of cultivation there can be no doubt the commencement of the disease belongs.

The Larch thrives on the mountains of the Tyrol, &c., at an elevation of from 3000 to 6000 feet above the level of the sea, and, therefore, it may well be considered sufficiently hardy and suitable for our climate. Although growing in such a high region, the trees mature their seeds much better than in this country; and admitting that all seeds from the Continent are not got from such elevations, yet throughout they have a warmer and longer summer, while the variable character of our summer and autumn weather does not permit their perfect development. Imported seed is more firm and plump, and generally grows two to one as compared with home-saved. We cannot expect a strong healthy plant from a half-filled half-ripened seed. Although such may germinate, it can only produce a sickly tree, and this in turn brings forth its kind. We know well that a Larch in an unhealthy state produces double the quantity of cones that a vigorous tree does, and therefore it becomes a most important question, Do the seed-collectors reject this unsound seed, or do they gather indiscriminately? Being in conversation a short time ago with a well-known Scotch Fir and Larch seed-collector in the north of Scotland, I inquired whether it was the general practice for dealers to gather seed from trees which were evidently in an unhealthy condition. He stated that such might be the case on the part of some seed-collectors, but his own invariable rule was to take seed only from mature and vigorous plantations; and he had no doubt whatever that what was gathered from weakly trees produced none but feeble and diseased plants. This statement confirms my own previous conviction, and coming from a gentleman of extensive experience, shows that the disease is largely propagated by inferior seed; and until a system of selection obtains, and collectors superintend personally the gathering of their seed, in place of buying the cones at so much per bushel or peck, we can never hope to eradicate the evil and regenerate the stock.

I have no hesitation in saying that but for a few of our nurserymen, who have been in the habit of importing a quantity of foreign seed annually, and by such means infusing, as it were,

fresh blood into the source of supply, this troublesome disease might have been much more general and serious than it is. We frequently hear of some plantations growing strong and vigorously, while others, in precisely the same circumstances, prove complete failures. The cause is to be found in the seed being good in the one case and bad in the other. I have always found that where the genuine Tyrolean seed, or that from high localities, is grown, the plants surpass in healthiness and rapidity of growth those raised from home-saved seed; and while it has been objected that such plants are less hardy than those raised from our own seed, I can state that, for a long time past, I have carefully watched the progress of both, side by side, from the one-year seedling to the two-year transplanted, and after the first year could never perceive any difference between them. In some seasons I found the one-year foreign seedling prolonged its growth in autumn, and was apt to be caught by early frost; but, after being transplanted, I have never observed any dissimilarity in regard to early or late growth.

In addition to what I have thus indicated for the prevention of the disease and the improvement of the stock, I would further suggest that a somewhat different management is requisite on the part of nurserymen. In place of having beds $3\frac{1}{2}$ feet broad, and from 20 to 25 yards long, producing 40,000 to 50,000 one and two years seedlings, were the same space of ground to contain about half the above quantity, it would conduce greatly to the healthiness of the trees. The best soil is productive only to a certain extent, and beyond that limit nature will not by any means be forced. No tree is more sensitive of confined space and impatient of want of air than the Larch; and while in some cases a short-sighted and mistaken policy may still compel adherence to the present practice of crowding, I am thoroughly convinced that true economy consists in growing the plants much thinner than has been generally done. Even with an additional cost of about a third more per 1000, superior plants would ultimately be found much cheaper than those now to be obtained in the market, and there can be no doubt they would come to be preferred.

A thorough system of draining for forest-planting is also needful, for the Larch does not thrive in wet, sour land. Every piece of ground allotted for this purpose should be carefully examined, in order to ascertain what extent of draining may be really required; and although the roots of trees seldom go far into the subsoil, it is generally advisable to drain to that depth; and after the drains are made, should the land be very wet, it would be much better to wait for a season until it drips sufficiently. Experience has proved that, without attention to draining, any previous care bestowed in the selection of proper seed, or in the preparation of the land, is utterly lost; and proprietors would consult their own interest by cordially seconding the exertions of their foresters in this important matter.

Besides the suitable preparation of the soil, there is yet a most essential part of forest-culture to be attended to—viz., the early and careful thinning of the young plantations. Whether it be the case that the blistering which frequently manifests itself on naked and drawn trees in plantations is the result of raising from thickly-sown seed, I am not prepared confidently to assert; but it is possible that such may be the fact, and that the germ of the disease may remain latent in the plants till they arrive at a certain age. The existence or development of this excrecence greatly depends on the future circumstances of the young trees; and nothing encourages this unhealthy token so much as having them growing close together. In such a condition, having no room to expand, they become lank and bare, and on being thinned are all the more liable to be caught by the spring or autumn frosts at the ascending and descending of the sap. Suffered to grow deprived of the needful circulation of the air, they acquire a sickly habit, and when suddenly exposed, the change is too much for them; they are, as it were, frost-bitten, and the blistering is the manifestation of the evil. But careful and timely attention to the requirements of the young trees would prevent this. Were a sufficient space for their healthy development always maintained, and the clearing-away of all superabundant growths attended to, it would allow the plantations to get a fair start; and I have no doubt the young trees would soon acquire a vigour such as would enable them to overcome any tendency to blistering which they might otherwise exhibit. We seldom see a Larch covered with branches to the ground presenting a blistered appearance; and were the treatment here suggested generally followed out, there would be comparatively few cases of failure heard of.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE Broccoli season being now nearly over, the stumps should be all cleared away, and the ground dug; or, if intended for Celery-trenches, these may be prepared without digging the whole of the ground. *Beans (Broad)*, as soon as the pods begin to form at the lower part of the stem, top the plants, which will greatly forward the cropping of them. Earth-up the successional crops after a shower of rain. *Brussels Sprouts*, prick-out the early sowing to strengthen them previous to finally planting them out. *Carrots*, sow Early Horn to draw young during the summer. *Celery*, prepare trenches by throwing out the soil from 1 foot to 18 inches deep; and for the early crop, which is seldom allowed to stand till it attains full size, $2\frac{1}{2}$ feet between the trenches will be sufficient. Dig into the trenches 6 inches of old hotbed dung, which for Celery is preferable to that which is rank and new, and as soon as the plants are ready plant them carefully, choosing a dull day for the operation, make a hole for the ball with a garden trowel, and finish with a good watering, and where practicable shade for a time in bright weather until they get established. *Dwarf Kidney Beans*, sow for succession, and transplant those which have been forwarded if not already done. *Parsley*, thin out the plants of the early sowing to 6 inches apart. More seed may now be sown. *Peas*, continue to earth-up and stick the successional crops. Sow, also, in smaller quantities for succession. The north sides of sloping banks are well adapted for these sowings, being cooler and more retentive of moisture. *Radishes*, sow the Long Scarlet, and generally Turnip sorts. *Scotch Kale*, sow; as also the old English Colewort. Both are very useful for planting after Potatoes. *Sea-kale*, remove the pots and also the covering as soon as done with, and afterwards dig between the plants. *Spinach*, thin the early crops, and sow again for succession. Prick-out all sorts of advancing seedlings that they may be stocky, and gain strength before their final planting. Stir the surface of the soil wherever the late rains have hardened it. Above all things catch the slugs, which are very numerous this season. Sprinkle crops they are fond of attacking with soot and lime mixed, and lay traps for these—such as cabbage leaves, slates, pieces of board, &c., and turn these over daily, when numbers will be found on the side that has been next to the ground and can be destroyed.

FLOWER GARDEN.

As the shrubbery will soon present a gay appearance, activity and attention must be the order of the day in this quarter, that the deciduous and evergreen flowering-shrubs may appear to the best advantage. Nettles, Thistles, and Brambles should never be permitted to make their appearance here. There are plenty of these to be seen in every hedgerow. The *Paeonies*, *Philoxes*, *Delphiniums*, *Lysimachias*, and other tall herbaceous plants to be properly staked. Roll, mow, and clip the edgings of grass lawns once every ten days, and use the daisy-rake at intervals. Thin out annuals, stake plants in the border as they grow, remove all decayed leaves and flower-stems, and everything disagreeable to the eye. What delightful weather we have had during the past week! It has been all that could be desired for present operations. *Verbenas* and *Petunias* should now be turned out into their summer quarters. Peg down all the shoots when the planting of the border is finished, and before another bed is commenced. Plant out Dahlias that have been grown in pots into the flower-borders, fill up the holes with some good compost and finish with staking each plant and mulching the ground. The early-flowering bulbs—as *Tulips*, *Hyacinths*, *Turban Ranunculuses*, &c., should not be left in the ground after the decay of the foliage, as if wet weather occur they will be making fresh roots, which weaken them for next season. Roses will require frequent examination. Remove unnecessary shoots at once. Plant out in rich soil a good supply of *Stocks* and *Asters* for the autumn, and sow a succession of annuals for making up any vacancies that may occur; and likewise make another sowing of *Mignonette* in pots, for the rooms or for filling window-boxes.

FRUIT GARDEN.

Peach and Nectarine trees infested with green fly or curled or blistered leaves to be well syringed with strong lime water in a clear state from a syringe or garden engine. Continue to nail young shoots of all kinds of fruit trees as they become sufficiently advanced. Give the Strawberry-beds a final stirring, and have some available material at hand for laying about them to

prevent the fruit from getting dirty. Straight wheat straw is often used in preference to clean short grass.

GREENHOUSE AND CONSERVATORY.

One great object in plant-houses at present is the preservation of the blossom from the burning effect of the sun. Abundance of air and moisture, proportioned to the demands of the plants, with shade, must be provided. Camellias, during the formation of young wood when they should be kept damp and warm, are too often packed together out of the way; at no time do they require more room and attention. The Chinese Azaleas which have been some time growing should be kept in heat until they have set their buds, when they may be removed to the open air; as may the Oranges and Camellias when the shoots get firm; exposure afterwards, if protected from heavy rains, will assist them to ripen their wood. Examine Heaths frequently for mildew, and apply sulphur the moment it is perceived, some of the soft-leaved varieties being very liable to be attacked by that pest at this season.

STOVE.

As regards stove plants and Orchids, thorough cleanliness, free ventilation, plenty of atmospheric moisture, and occasionally a slight shading in very bright sunshine are at present the chief requisites. No means should be neglected to encourage a free growth at this period in Orchids, in order to have their pseudobulbs firm and well ripened betimes.

PITS AND FRAMES.

Young stock in these structures will now be making rapid growth, and must be carefully attended to as to watering, stopping, training, &c. Expose Zinnias and other tender annuals entirely night and day by removing the lights and covers. Plants that are being kept to succeed Tulips, Ranunculuses, &c., next month to have plenty of room given to them; the lately-struck plants require attention, they will come in very useful by-and-by to fill-up vacancies in beds, &c.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

FINE gentle rains have come at last, enough to make the hard clods crumble nicely, but not enough yet to do much more than damp the parched surface. Sowed Peas, Beans, Kidney Beans, and Runners, damping the drills well after sowing before covering up. Gave Cabbage and Cauliflower that we wished to cut early, good soakings of manure water. Watered Turnips, and transplanted a few, though the garden sorts do not answer so well as the Swedes. With the latter there is no difficulty, and were we farming we would always have a nice little bed in the garden for filling any vacancies in the field. In fact, could we make sure of dripping weather, it would be the cheapest of all plans with Swedes, as we could keep them in a bed easily cared for, and protected from fly, and plant after all danger was over. The only secret is firm but shallow planting, just as in the case of Onion-planting. The great point with the latter is just to fix the roots, and not bury the necks, for if you do you will have thick necks and poor bulbs: hence, as a general rule, autumn-sown Onions make the best bulbs, when carefully transplanted. We have effected the same object by moving the earth from the necks of those left standing before they began to swell much—say in March. Carrots and Parsnips may also be transplanted in an emergency, but they do not in general do so well as when left where sown. Beet, on the other hand, transplants well, especially when young.

Pricked out Cauliflowers and Lettuces from seed-bed, and sowed more, also the general stock of Coleworts, and a few more of Broccoliis, though thinking we had pretty well enough for our wants. Threw a little lime and ashes among the seed-beds, to keep slugs off, and make them more stubby, and less inclined to get leggy and foxy. Run the Dutch hoe through Onions, Carrots, Parsnips, &c., and sowed succession of Carrots, the main crop of Beet, Salsafy, and Scorzonera, and also the last of our Sea-kale and Asparagus seed, having failed to find a piece of ground for it before, and the first sown six weeks ago, owing to the dry weather, is not yet up, though all safe and swelling in the ground. It is a good plan to sow *Asparagus* in the autumn as soon as the seed is gathered. Cut off the strong seed-stems of Sea-kale, and thinned redundant shoots. If these are planted with a bit of the old stem in dripping weather, they will make good plants before the autumn. A little salt, just enough to whiten the ground slightly, two or

three times in summer, will do them much good (and the same may be said of *Asparagus*), and manure water, too, at that time, though we have little faith in either salt or manure water being applied when the plants are at rest in winter. The salt, also, helps to keep down weeds. Attended to *Cucumbers* bearing just too freely; thinned out fruit, and stopped and regulated, as, if bearing too much in April and May, the plants are sure to be prematurely exhausted. Potted off those for ridge, Gherkins, and Vegetable Marrow, as the place is rather cold for these things to do much good when sown in the open air. In fact, we find that they are all the better of a little bottom heat to start them in. About Sandy and Biggleswade they have no more trouble with *Cucumbers* for the autumn supply than other folk have with Peas, except the thinning of the plants, the seeds of which are sown in rows some 5 feet apart. In common circumstances, however, north of London, the plants will do better with a little hot litter and short grass placed beneath the soil, and it matters little how it is done—whether placed in a trench, or in a hole with the soil above; or a ridge should be made on purpose, with earth thrown over it. Large Gourds are also helped by this process, though they will often attain 100 lbs. weight if planted in rich soil, and well supplied with manure water.

After having tried Custard and other Marrows, we have fallen back on the old Vegetable Marrow, just because good judges say that after all it is the most desirable for cooking purposes. We cannot say much on the subject, as such a dish once a-year is as much as we have ever ventured upon. As our Mushroom-bed in the shed was just perceptibly warm, added 1½ inch of droppings, beat firm, and earthed over with about 2 inches of soil, the lower part fresh lumpy turf, and the upper fine riddled loam beaten firm, watered and beaten again, so as to make it about 1½ inch thick. We expect this bed will bear soon, and we must put up a bit more without delay. The Covent Garden people know the luxury of a thick, moist Mushroom in June, July, and August. A cool cellar in these months might be better than our thatched shed, though the latter answers remarkably well. Pricked out Celery, and defended from the sun, and watered freely the first plants, which will soon be turned out.

FRUIT GARDEN.

Disbudded, hunted for insects, thinned Grapes, watered Vines, watered Figs, thinned Peaches, tied shoots as we could get at them, and kept earliest pit of Vines drier, as the Sweetwaters are changing fast. Regulated *Melons*; set these in flower, leaving air on night and day, though the air should be only a quarter of an inch, by means of a peg at top and bottom of the sash in cold nights. The draught of air is of great assistance in insuring an abundant setting, and a little air at all times at the top is a great preservative against canker, damping-off, bad setting, and blotched and scorched leaves. Our earliest this season will be in common frames, and the heat beneath them is formed chiefly by mowings of the lawn, leaves, and a little dung; the layer of old leaves being at the top. When well mixed such a combination will maintain heat long, and may be used safely; but if the precautions insisted on often are not attended to, failure from steam and noxious vapours will be the result. Many use such materials as "W. M." proposed doing at page 351, and ruin is the consequence. We were lately told of some fine new *Geraniums* that it was advisable to hurry on that were thus ruined in a night. We have known scores of instances in which *Melons* and *Cucumbers* in frames were injured and ruined by allowing the steam from a fresh lining to get inside of the frame, and no method will insure this more effectually than sliding a sash down over a fresh-made lining in front. So much easier is it to slide a sash down than to tilt it up at the back, that eight out of ten men will slide the sash instead of elevating it. Not only is there this additional danger in such circumstances from steams and vapours at an early season, but the cold air strikes the plant at the back before it is so much warmed as it would be when, by elevating the sash, the cold air is mollified by passing through the heated air as it rushes out. It is a good plan to have ventilating-boards for this purpose tied by a string to the back of the frame, either cut in a triangular form, or, what is better, with notches cut into them, so as to hold more securely; for if not tied they will always be to seek when wanted. We dwell on these little matters the more, because want of attention to them is often fatal to the plants and the crops. In every case of new lining, the inside of the frame should be examined, and the ground made firm all round the box, so that steams shall not enter. If the bed is made 2 feet larger than the frame every

way linings will be little needed, and the manure may be banked up against the frame, and thus throw in atmospheric heat, which will permit of more air being given, and secure the roots more from excessive heat than when all the extra heat of the confined atmosphere has to rise through the soil in which the plants grow. See mode of making such beds page 349. We must find a place for potting young Vines as soon as possible.

Several friends on whose opinion we place great value, have expressed their conviction that early Grapes from Vines in pots, though looking as well, are not so rich in flavour, and are more watery than those planted out. We think we have sometimes noticed the same thing, and we throw it out for consideration, as the place that grows Vines in pots would often grow them quite as well planted out, and at a great diminution of labour. One friend attributes the want of consistency and firmness to the delugings of water the plants must receive if kept entirely to the pots.

ORNAMENTAL DEPARTMENT.

Potted Ferns, Achimenes, and a few Gesnera zebrinas, and others, Cannas, Marantas, &c., and placed the fine-leaved Begonias, Gesneras, &c., under Vines, where they will receive the necessary shade; the Cannas, in cool house, to harden them for out-of-door work. Removed Primroses and part of the Cinerarias from conservatory. Set the former in front of orchard-house to ripen a little seed, and the latter out of doors preparatory to planting them out. After June we always think that unless in a cool shaded house, Cinerarias are more trouble than they are worth, as when not kept cool and airy they are apt to be covered with insects. Sowed seeds of Cineraria, will plant good kinds out for suckers. Pricked off *Primula sinensis* from the first sowing. Potted young plants of Pelargoniums and Geraniums, and took those in bloom to the conservatory. Potted Fuchsias, Lantanas, &c., for summer and autumn flowering, and potted and boxed all the Dahlias, and placed them where they would root quickly preparatory to hardening them off. Potted Chrysanthemums, at least a portion of them, which ought to have been done before, if massive plants were desirable. Pricked off lots of annuals of a half-hardy character for the flower garden, as Asters, Marigolds, Stocks, &c., that they might plant better by-and-by. Sowed lots of Mignonette and hardy annuals in the way described the other week. Gave full exposure to those coming up, that had been sown in a bed under a piece of calico, so that they might be moved in patches, as described at pages 321 and 322. Potted-off in small pots lots of Petunias of favourite kinds, as they stood so thick in the cutting-pots, and gave them a little hitch under glass in a mild hotbed. Pricked-off more Lobelias in case they should be wanted, and, as we find our Perillas are rather late and we like to turn out good plants that will look after themselves, have potted and pricked-out a good many hundreds in a mild hotbed; and we must wait eight days or a fortnight before we can plant them out.

This is a step that does not suit my good assistants from the neighbourhood. If there is one thing more than another they dislike when planting, it is the leaving a part of a bed or a border unfinished as they go. Another proceeding which goes against the grain, is the planting a front row higher than a back row. Now, as it so happens that we want a lot of Perillas in rows between the grandiflora double Feverfew, and yellow Calceolarias, and both of these are from 8 to 12 inches in height, we must have the Perilla somewhat passable before placing it between them—say nice plants some 6 to 12 inches in height, and they will be getting to that in a fortnight under good treatment under glass. It is true, we might plant them smaller, but then would not my boys turn up their noses at them, and as much as hint that surely I did not mean it?

In all combinations of colours and arrangements of groups of flowers, the question of heights is of as much importance as that of colours. This may not seem to be the case in some large establishments, where the labour power is so liberally supplied, that a plant naturally 30 inches in height may be pegged and dressed to be only 6 inches high; but these matters are of moment, when pretty well as good a show is expected, and a vast deal more besides, at an outlay little beyond what in the large establishment would be spent in fuel alone.

The refreshing showers having put some water in our tanks, we began to feel more independent. Earth-pits of bedding plants that were covered and protected not so much from cold, as from sun, have been uncovered since then night and day, and have got beautifully watered for planting, and hardened-off at the same time. Some of our Calceolarias have now grown rather

large, but they lift with good balls. If we had potted them, independently of the labour of watering, we could not have given them the water to keep them healthy. The rain also cracking the clods of the hard-baked ground, enabled us to break them with the back of the spade, and turn down the wet surface, and turn up that which was dry, and thus the surface will be warmed and moistened at the same time.

This favourable change has set us planting sooner than we otherwise would have done, and most likely thousands of plants will be in the ground before this is ennobled in printer's ink. We have, however, begun with the hardest first, as Calceolarias, which wanted moving, Scarlet Geraniums, &c. We notice the requirements of a correspondent as to the arranging of colours, the distance of plant from plant in planting, &c. For the arranging of colours there are no such instructions to be gained elsewhere as are to be found in the plans of flower gardens in these pages, the mode of planting, and the good-natured criticism on the systems adopted. A correspondent told us the other day, that in a few Numbers he gained more explicit information on these subjects than he could obtain at the expense of many pounds, from consulting the high-priest professionals of taste.

Could we use the liberty and audacity of our good friend Punch we might hint about the game, and the wine, and the salmon, and even the beef, that are no bad things for the labourer that is worthy of hire. In the meantime we would merely state as to distance in planting that that must depend greatly on the size of the plants and the time the best effect is wanted. For instance: If the beds are wanted to be full soon we must plant thickly, even if we have to thin afterwards, to keep up succession of bloom. If the display is not wanted until August, after the close of the London season, then for free-blooming the planting should be rather thin. As an instance, we have just finished a border 5 feet wide and some 600 feet long that has been panelled, ground coloured, and dotted, and in ever so many modes. It will be seen from both sides. This season there is an edging of Cerastium on each side, a centre line of yellow Calceolarias, and a line on each side of purple-brown Calceolarias between the yellow and the Cerastium. There will be higher plants some 4 feet in height in the row of the yellow Calceolaria at 7 feet apart, and these raised specimens will be purple, crimson, blue, scarlet, &c. The yellow Calceolarias, strong plants, stand 1 foot apart in the row, and the purples, not so strong-growing, are some 8 inches from each other in the row. Of course, while the colours will be somewhat distinct, it is intended that the whole ground shall be covered, and the one row touch the other. We could hardly make the general planting interesting without some rough plans. This season, for various reasons, we will take the simplest modes of planting—that is, what will require least time in planting, and least labour in attending to afterwards; so that we hardly think that minute details would be interesting, especially to those to whom intricacy and augmented care and labour are pleasing considerations.—R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

ROYAL HORTICULTURAL SOCIETY'S FLORAL COMMITTEE.—We are informed by Mr. W. Earley, gardener to Felix Pryor, Esq., Digswell, that he exhibited on the 5th inst. the Tea-scented Rose *Devoniensis*, which we attributed to Mr. Trean.

BOOK ON GREENHOUSE AND HOTHOUSE MANAGEMENT (*H. T.*).—There is no better directory than "IN-DOOR GARDENING," by Keane, which you can have free by post from our office for twenty postage stamps.

VINES WITH WARTED LEAVES (*F. A. Mansfield*).—There is no disease affecting the Vine leaf that we notice, except some excrescences, the result of too much moisture at the roots and a too close moist atmosphere inside. Extra drainage if needed, and especially a drier and more airy atmosphere, are the remedies.

GARDEN ENGINE (*M. W. H.*).—The maker named is Mr. G. Heaven, Hight Street, Birmingham.

FLOWER-GARDEN PLAN (E. W.).—We like your first proposal for a centre best—*Cineraria maritima*, Tom Thum's, and Flower of the Day. 2, 8, will be beautiful, and so will 5, 11. You have partly crossed the other colours, such as 4 and 10 Deference Verbena; and we would carry the principle out with 6, 12, white Verbena; 7, 13, purple Verbena; and 3, 9, might also be a purple or puce, as Christine or Wonderful, or such dark things as Stella Germanum or even two beds of Heliotrope. The two side wings will also do very well; but we would have preferred edging all the beds there or edging none. We think also the plan would be improved by doing away with fig. 18, and bringing 15 more into the centre. We also think that there would be too much of the same colours in 20, 18, and 15. We would prefer 18 to be Frogmore Scarlet edged with Cerastium, which would break the line of orange in 20, 18, and 15. We will have your centre engraved, and then return the drawing.

OLD VINES FAILING (M. B.).—Under the circumstances of building a new viney, and the old vines having failed for three years, we would prefer new vines in a fresh border. Old vines often do remarkably well when carefully lifted. If very old there would be some trouble with them.

ENOTHERAS ACAULIS AND NANA AS BEDDERS (S. M. S.).—*Enothera acaulis* is sometimes good, but in our opinion not much to be depended on for regular flowering. *Enothera Drummondii* nana is a strong-growing trailing plant, with large, fine, yellow flowers, best treated as a half-hardy annual—that is, sown in a little heat and then transplanted, and thus treated it will bloom until frost comes. The flowers are as large as half-crowns. Treated in the same way as a low plant, with bright orange flowers about the size of a large sixpence, and the plant about 9 inches in height, few annuals are more beautiful than *Enothera bistorta* Veitchiana. See article on "Annuals" recently contributed by Mr. Fish.

HEATHS AFTER FLOWERING (Country Curate).—You might have left the plant of *Erica hyemalis* a fortnight in the propagating-house after potting, and you had better place the plant now in a frame or pit, where you can keep it closer—that is, with less air than in a greenhouse, until the shoots are growing freely, when more air can be given by degrees to ripen the young shoots in the autumn. *Hyemalis* stands cutting back more than most heaths; and we see nothing wrong in your treatment if you are all right as to soil, which you call poor, but when in a young state such plants must be chiefly grown in sandy heath soil. As they get well established such kinds may have a little fibry loam. If you have put your plant in loam the sooner you change the soil the better.

GOOSEBERRY SAW-FLY (J. M., Boston Spa).—The insect enclosed is a small bee, and has nothing to do with the Gooseberry caterpillar, which is the larva of a Saw-fly.—J. O. W.

VARIOUS (A Young Gardener).—The *Panercium speciosum* will do best in a mild stove when making its growth, and in a warm greenhouse when in bloom, and when at rest. Give the *Cyanophyllum* a little loam with the peat, allow the heat to fall to 65° or 70° at night, and shade from bright sunshine. The *Dicksonias* and *Alsophias* would most likely be the better, if underpotted, of a larger pot and fresh fibry loam and peat, getting rid of a good portion of the old soil. Keep them a little warmer for a month afterwards, and shaded. They will be the better of weak clear cool manure water such as that from old cowdung.

VINES FOR AN ORCHARD-HOUSE (A Three-years Subscriber).—Two Black Hamburgs, Chasselas Musqué, Early Saumur Frontignan, and two Royal Muscadines.

BEDDING-OUT (H. L.).—We think that in "Doings of the Week," to which you refer, you will find much of the information you require. In a late article on annuals, you would also find something suitable on sowing. As a general rule, with the exception of *Calceolarias*, it is well to strike the most of bedding plants early in autumn. The distance of planting in beds and ribbons has, perhaps, not been sufficiently alluded to, and this matter "R. F." will bear in mind. Meanwhile it may be stated, that blue *LOBELIAS* should not be more than 6 inches apart; *Calceolaria Aerea* floribunda 10 to 12 inches; Tom Thumb *Geranium* 12 inches; *Alma*, *Bijon*, 10 to 12 inches; larger kinds more apart. It is better to thin when too thick, than to have patchy beds.

DISEASED GRAPES (Maria).—Not at all owing to mildew. It is called by gardeners "the spot," and is caused by the roots being not sufficiently active to supply the demands for the upper growth. Removing the soil from above the roots, replacing it by some richer compost, and covering the surface at night and during heavy rain with mulch, and uncovering during sunshine usually removes the malady. If the roots have descended into wet or ungenial subsoil, they must be brought to the surface next autumn.

GREENHOUSE FERNS (Tyro).—Shifting these and *Lycopodiums* into larger pots now will not retard their growth, if care be taken not to disturb their roots. A mixture of cocoa-nut fibre dust, loam, and silver sand in equal proportions will suit them all. By the beginning of June we shall publish a highly illustrated work upon the culture of exotic Ferns, hardy, greenhouse, and stove.

BOOKS (Oatlands).—Our new Manual "Manures for the Many," is in the press. You cannot have a more suitable book than Sanders on "The Vine," which is published at our office, price 5s. You can have it free by post if you send two additional postage stamps.

NAMES OF PLANTS (N. K.).—1, *Veronica gentianoides*; 2, *Corydalis lutea*; 3, *Asphodelus luteus*. (J. D.).—1, *Doronicum pardalianches*; 2, a *Symphitum*; 3, a *Carex*; 4, a *Luzula*: all unfit for examination. (C. C.).—The only one we recognise is *Euphorbia amygdaloides variegata*. The rest are too immature and insufficient. (E. F.).—*Erica carnea*. (*Ameius*).—1, *Hyacinthus non-scriptus*; 2, *Valeriana dioica*; 3, *Galium cruciatum*; 4, *Achillea millefolium*. (H. G.).—Very crushed, seems to be *Begonia Ingrami*. (*A Subscriber, Kilrush*).—1, *Caltha palustris* fl. pl.; 2, *Mathiola tristis*; 3, *Leucocjum aestivum*; 4, *Funkia albo-marginata*. (*A Subscriber, Exeter*).—The variegated *Hydrangea* is a greenhouse plant. Your other plant is apparently *Heterocentrum mexicanum*, and requires stove treatment. (H. N. E.).—Your plant is *Euryops punctatus*, of De Candolle ("Erodromus," vol. vi., p. 445). It is a Cape plant, and its hardness therefore doubtful. You describe it as "a hardy evergreen shrub with very pretty foliage, which makes it useful for winter nosegays." Do you mean that it is really hardy, or merely that it has withstood the late mild winter? If you find it permanently hardy, whereabouts is your residence? We ask these questions because it will be generally interesting to know that this plant is able to endure our climate. (M. J., Adamstown).—It is the American Cowslip, *Dodecatheon Meadia*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY SHOWS.

MAY 25th, 26th, 27th, and 28th. NORTH LONDON (Agricultural Hall, Islington). Sec., Mr. J. Sillitoe, Agricultural Hall. Entries close May 15th.

MAY 28th. NORTH HANTS. Sec., Mr. Henry Downs, Basingstoke. Entries close April 23rd.

JUNE 3rd. BEVERLEY. Secs., H. Adams and J. Kemp, jun.

JUNE 11th. THORNE. Sec., Mr. Jos. Richardson.

JULY 29th to 24th. WORCESTERSHIRE. Sec., Mr. J. Holland, Chesnut Walk, Worcester. Entries close June 20th.

AUGUST 29th. HALIFAX AND CALDER VALE. Sec., Mr. W. Irvine, Halifax

SEPTEMBER 2nd. COTTINGHAM. Sec., Mr. J. Brittain.

CHICKENS OUT OF DOORS.

THE advent of refreshing showers will bring gladness into many a poultry-yard. The hard, parched, and cracked earth that starved all animal life on its surface, and imprisoned all that was beneath it—that prevented the chickens from scratching, and that yielded no more food than a deal board—has imbibed the grateful moisture, and given liberty to the thousands of animalcules that dwell upon and within her. Good times for the chickens; natural food and natural medicine. Now they will grow. And our good, intelligent, but somewhat grumbling man, what will he say? For some time drought has been the cause of everything that went wrong; he has lost his stock in trade, but after another showery week he will shake his head, talk despondently about wet, and wonder when we shall have any sun. In our leisure we have kept a record of our poultry curiosities, and we find, in answer to the question why there were so few eggs, the following replies within a week:—"Too wet," "Too dry," "Scorching sun," "No sun at all," "No faith in pullets," "Hens too old."

We will assume that all hens and chickens are out of doors to enjoy the advantage of a grass run, and the varied natural food to be found there; but it will now be necessary to shift the position of the rips a little, as there is a probability of broken weather. While there was no rain the little hollows and the bottoms of banks were advantageous situations, but they should now be avoided. Little knolls and banksides will be better, as they will not hold rain. A dabbled roosting-place is bad for chickens. Where grass is short and fed-off, of course a rip may be put anywhere, the only precaution necessary is to turn the back to the wind every night; but where grass is long, and growing as it will now, comparatively bare and thoroughly dry spots must be chosen. Chickens of six or seven weeks old soon perish in long grass if they are overtaken by a heavy shower. The neglect of these simple precautions once cost us in a four-acre field, thirty-seven out of fifty forward Spanish chickens.

PROLIFIC EAST-INDIAN DUCKS.

I HAVE a pen of East-Indian Ducks hatched last year. After laying about twenty eggs they commenced sitting. One of them hatched nine young ones on Friday, May 1st, recommenced laying on the Tuesday morning following, and has laid every day since. I am told that this is not usual; and if it is as unusual as I suppose it to be, my brother poultry-fanciers may feel an interest in knowing it.—JOHN DUTTON, *Bunbury, Tarporey*.

[It strikes us this is a very unusual occurrence. It is one we have never met with in our experience. The earliest case we know of was one in which a hen took to laying when the chickens she had hatched were only a fortnight old. In that case she immediately became a bitter tyrant to her family, and we were obliged to take them from her; as when the hen is occupied with laying the foundation of a new family, the noses of the previous one are generally broken. We shall be glad to hear how this *rara avis* conducts herself towards hers; also, whether she lays in a nest, or drops her eggs about. An account should be kept of the number.]

DRONE-BREEDING QUEENS.

I BEG entirely to disclaim any idea of attempting, as Mr. Lowe expresses it, to upset the general belief of bee-keepers as to the worthlessness of drone-breeding queens. It is only under very exceptional circumstances indeed that one of these is tolerated either by "B. & W." or myself. In a general way a great multitude of drones is a great evil, and under ordinary circumstances

I fully indorse the conclusion arrived at by the German bee-keepers at Potsdam.

Whilst admitting that fully-developed drones are physically perfect by whatsoever queen they may be produced, Mr. Lowe, nevertheless, considers that small drones bred in worker-cells must be imperfect, because female bees become so when bred in a similar manner. In this opinion he is, however, completely mistaken, since I have proved by anatomical investigation that the male offspring of a virgin queen bred under these disadvantages are yet perfectly capable of fulfilling the part allotted to them.

I think it will be conceded by all who have done me the honour to peruse my articles, that I confine my attention principally to facts, and meddle very little with theories. I follow neither Dzierzon nor any other man one step farther than my own experience shows him to be correct. Having thoroughly investigated the subject of parthenogenesis in the honey bee I have proved it, and, therefore, have no hesitation in proclaiming it to be an established fact; beyond this I do not go, and have nothing whatever to do with any theory which may have been propounded as tending to elucidate what is undoubtedly one of the greatest of Nature's marvels.—A DEVONSHIRE BEE-KEEPER.

STEWARTON OCTAGON HIVES WOODBURYISED.

It is now some years since, like your Oxfordshire correspondent "UPWARDS AND ONWARDS," I was much struck at the grand display of octagon supers in a Glasgow window: and stepping into the shop for a more minute inspection, I found the counter and shelves laden with like trophies of apian skill. Selecting a box, the straightness, dazzling purity, and rich massiveness of the combs were quite tempting to behold. I inquired its cost, and was rather taken aback by the seller, after a glance at the weight and a little mental calculation, informing me it was "exactly three guineas." Contrasting in my mind's eye such results, my little glass supers (Payne's new shape) seemed small indeed. Failing to elicit any information further than that the entire stock was drawn from Ayrshire, where alone the hives were made and the system of management fully known, I resolved to make a tour of discovery through the neighbouring county. This resolve I shortly afterwards carried out, bearing introductions to a few of the merchants' principal furnishers, and returned with a supply of hives and an addition to my store of apian knowledge in many important particulars at which the best works I had read on the subject failed even to hint. I also received a deep impression not easily effaced of the thoroughly practical acquaintance, gained by long experience, of the great majority of Ayrshire bee-keepers on all points of management, their enthusiasm, and the fine fraternal spirit of all, from the humble cottager up to his stylish neighbours.

The Stewarton-hives came up fully to what I had anticipated during the comparatively capital seasons with which we were then favoured.

There was one part of these hives I thought open to objection—seven bars $1\frac{1}{2}$ inch broad in the breeding-boxes. This breadth, although most suitable for supers, was indefensible in the others on any other plea than that in these no guide-comb was used, the inmates being allowed full liberty to twist about their combs according to their fancy. Still I found that the broad bars lessened the communications between the several boxes composing the set; and at my suggestion the number was increased to nine $1\frac{1}{2}$ broad, and in some eight, the six central being $1\frac{1}{2}$, and the two end ones $1\frac{1}{4}$. Latterly, as a still further improvement, I suggested omitting bars altogether in the second breeding-box, thereby throwing open to the peregrinations of the queen uninterrupted access to a much larger area of comb, as has been already explained in the adapter plan in No. 5, New Series. In the hives sent out for the present season I find yet a further change, which has prompted these remarks—viz., the number of bars increased to ten of the narrow Woodbury pattern, and duly ribbed, kept in their place with small brass screws, and consequently all moveable. On making inquiry I found that this improvement, like the preceding ones, had only been adopted after various tests, which terminated with the best results; and I have, therefore, much pleasure in congratulating your excellent correspondent "A DEVONSHIRE BEE-KEEPER" on such a satisfactory proof of the value of his invention, emanating as it does from so thoroughly practical and trustworthy a source.

When on this subject I may mention, that a still longer comparative trial of octagon and square hives side by side, confirms the opinions I formerly expressed as to the superiority of the first-named. At the present moment I have a very striking proof in my own apiary, consisting of six stocks, two in octagon, and four in square hives. Three of the latter were strong colonies that did not swarm last season, while the octagons in one case did, but the bees were beaten out of their own hive at the end of the season into an empty one to give place, with the view of saving a good queen and a small train of followers; and yet these two hives, started under such disadvantageous circumstances, (the combs of the one being fabricated almost solely from sugar), now outnumber in population any two of their square competitors, having in addition their combs much better kept; both advantages to be accounted for by the better concentration of heat in the octagon form, and all the more observable after the very unusually cold bleak April we have just passed through. During summer heat the shape of a hive is of much less consequence.

To such of your readers as formerly doubted the accuracy of the above hypothesis, or any curious to peruse the arguments at length in favour of the octagon form, I would refer to page 141 of "Thorley on Bees," published 1765; and, should they wish to go further back, to the 80th page of that quaint old book published by Moses Busden, the apothecary, in 1687.

This last-described improvement overcomes almost entirely the only valid objection brought against these hives for the experimental purposes of the day—viz., the unequal length of bar, as the six central bars are now all of one length and moveable, and, of course, contain the great bulk of the brood, the outer ones being almost exclusively used for storing honey. I shall now be able to work together with much greater facility my octagon and square hives, which have all along been a principal inducement to keep the latter $1\frac{1}{4}$ inches square.

I have only to add, what I have more than once stated, that in my opinion Stewarton octagon hives are the cheapest and best wooden hives procurable for practical bee-keeping, particularly to such as are located in a fair honey district.—A RENEW-SHIRE BEE-KEEPER.

MEETING OF GERMAN BEE-KEEPERS AT POTSDAM.

(Concluded from page 286.)

V. *Why have bee-hives recently been often changed from the ständer to the lager form?**

Herr Kritschke, who propounded this question, asked Pastor Dzierzon to state the reason which had induced him to change from the ständer to the lager form, and to construct the twin-stock.

Pfarrer Dzierzon said—Although I did not moot the question, I soon found on perusing it that my twinstock had been taken into consideration, and that it might really be put as follows:—"Why is the twinstock to be preferred to other hives?" Convenience in placing it is what especially induced me to construct this hive in the form of a lagerstock. It does not require an especial stand or bee-house, which frequently costs more than the stocks are worth which are placed in it. Also, twinstocks can be placed in any favourable situation without preparation, which is very convenient for transport. Then the lagerstock has always been considered richer in honey; nor does the honey require refining, since brood, especially drone-brood, is restricted, because as is known, drone-cells are generally found in the lengthening of the combs downwards, which the shallow lagerstock does not admit of. Even worker-brood in the lagerstock cannot be unduly extended at the expense of the honey stores, because the queen when egg-laying does not readily remove to side-combs which are free from brood, whilst on the same comb in which she has commenced laying she immediately deposits an egg in every cell which the bees make downwards.

Other speakers advocated the same opinions.

VI. *Is there any paint which will keep straw hives absolutely waterproof?*

Herr Gruwe recommended a composition formed of five parts wax, one part Venetian turpentine, and one part sulphur laid on warm.

Herr Gutknecht.—One part loam, two parts cowdung, one part wood ashes well kneaded together and plastered over the hives immediately. Afterwards they may be varnished.

* The "ständerstock" is a tall, upright edifice, whilst the "lagerstock" is of a longitudinal form with the entrance at one end.

Lieut.-Col. von Wedell.—Take coarse blotting-paper, make it into a pulp with hot water, and mix it well with clay.

Herr Schindler.—One part of curd mixed with one part buttermilk, then one part English cement, and two parts sifted sand are added. This is thinned with buttermilk or water so that it just admits of being worked, and must be continually stirred whilst being laid on. At the expiration of half-an-hour another coat should be given, which forms a waterproof covering of a grey stone-like appearance, and which becomes as hard as stone when painted over with linseed oil, with which any other colour may be mixed. Wood ought not to be planed, and for roofs red lead may be substituted for sand.

The President asked gentlemen to try these various compositions and report the result.

VII. *What are the advantages and disadvantages of allowing bees to build combs at their own will?*

The discussion on this subject was confined to debating the propriety or otherwise of allowing bees to build combs according to their own fancy in the "honey-room" (which answers to our supers), and presented little to interest or instruct English apirians.*

This closed the first day's proceedings. At three o'clock two hundred bee-keepers dined together at six tables under trees in the open air, and the rest of the day was spent in viewing the sights of Potsdam, which were thrown open to inspection.

SECOND DAY.

VIII. *Of what importance is pollen in the preparation of food, and in nourishing the three different kinds of individuals in the bee-hive?*

This query was introduced by Baron von Berlepsch, who propounded the novel theory that honey contained nitrogen in addition to carbon, hydrogen, and oxygen; or if not, then the modern doctrine of physiology that nitrogen is necessary to the formation of animal bodies is untrue in respect to bees, since he found they could pass the winter in health, and rear brood during that time on honey only. This doctrine was, however, controverted by Pastor Dzierzon, Count Stosch, and others, who upheld the correctness of the analyses which excluded nitrogen from the constituents of honey, and contended that bees must have access to pollen in order to maintain them in health, and to enable them to bring their young to perfection.

IX. *Can the diligence of bees be increased? and, if so, by what means?*

Count Stosch said the bee is always as diligent as she can be, but not always as she could be if circumstances permitted. By removing hindrances her industry is increased. The diligence of bees in its nature of an impulse to work cannot be enhanced; the effect of that impulse may be increased, but not the impulse itself. After referring to the loss of a queen decreasing their activity, and describing the mode of remedying this evil, the speaker said he considered the insertion of empty combs to be one means of increasing the industry of bees. He also recommended the artificial division of overstrong stocks. Natural swarming, he pointed out, diminishes their activity in a threefold manner—1st, Bees work but little whilst preparing for swarming; 2nd, In the act itself, which is sometimes frequently repeated, much valuable time is lost; 3rd, The queen must limit oviposition in order to be able to fly. Large honey-stores may diminish the activity of bees in the same manner as excess of population and great heat. In these cases some honey or brood-combs should be removed. Lastly, the most natural, the easiest, the most indisputable, and the most effective means of increasing the diligence of bees is to improve their pasturage. The speaker briefly mentioned three modes of procuring a harvest for bees when nature does not offer any, and by means of which bees have the opportunity of working when otherwise they must be idle. These means are—Giving water in winter and early spring, feeding with flour, and speculative feeding with honey.

X. *May worker and drone eggs recently laid in the combs be safely sent away, and for how long a time?*

Herr von Wedell related an instance in which worker eggs in the comb had been safely sent to a distance, and afterwards hatched, every egg being covered with a small portion of honey.

Pfarrer Dzierzon doubted the fact, considering that the presence of honey in the same cells would cause the bees to destroy the eggs when presented to them; but stated that eggs would remain uninjured for a period of from eight to fourteen days.

* Herr Schulze advised compelling bees to make thick combs which are unfit for breeding, and recommended side communications.

His experiments proved—1st, That eggs may be transported by land-carriage without becoming detached from the bottom of the cells; 2nd, That the vital principle remains latent in the worker egg during a longer time when out of the hive than it would do if left in it; 3rd, That worker eggs are hatched earlier in a high temperature than in a low one.

XI. *How can bad honey be purified?*

Herr Blume said good honey can be easily purified by clarifying it with albumen and straining through a fine wire sieve or a coarse cloth; bad honey can only be purified by means of tannic acid or carageen moss, which is done in the following manner:—To 15 lbs. of honey are added 30 grains of tannin dissolved in water. The whole is thinned by the addition of one-third to one-half part of water, and boiled. After this it is slowly poured through a vessel with a perforated bottom covered with bone charcoal and washed quartz, care being taken that it does not run down the sides. When filtered in this manner the honey is fit for making mead or wine. Bad honey may, however, be entirely restored in the following manner:—To 20 lbs. of inferior honey (heath honey for example) add a drachm of carageen moss; when this is stirred until thoroughly mixed it must be boiled in a water bath, and all impurities will rise to the surface. The pure honey underneath is then carefully drawn off through a tap inserted near the bottom of the vessel, and will be found perfectly clear and bright.

XII. *How can a stock be compelled to swarm early?*

For this purpose keeping strong stocks and feeding was recommended; but with regard to the size of hives a difference of opinion prevailed.

Baron von Berlepsch said, I have never found—1st, That bees with a queen of the current year made many drone-combs; 2nd, That a queen of the current year laid many drone eggs; or 3rd, That a queen of the current year has led off a swarm.

The thirteenth question, "What important discoveries have been made in bee-keeping during the past year?" was not debated for want of time.—A DEVONSHIRE BEE-KEEPER.

OUR LETTER BOX.

COCHIN-CHINA COCKS PARALYSED (*M. A. C.*).—The usual cause of these birds losing the use of their legs, is the rupture of a small blood-vessel on the brain. This, generally, is occasioned by the birds being too fat. A table-spoonful of castor oil, and a diet of soft food, chiefly boiled potatoes, abundance of lettuce leaves, and freedom from excitement, whether from fright or other cause, is the best treatment, but it requires perseverance, and there is no certainty of success.

HEN EGG-BOUND (*A. N.*).—Your Golden-spangled Hamburg hen is probably over-fat. Give her a dessert-spoonful of castor oil; feed her on boiled potatoes and a little barley-mead mixed with them, and let her have plenty of lettuce leaves. Continue this until she lays regularly, and then be careful not to give her food that is too fattening.

ILLNESS OF COCHIN COCK (*Inquirer*).—There is something that offends in the inside of the Cochin cock, and he will not be better till it is removed. This can only be done through purging. You must at once give a table-spoonful of castor oil. Being as weak as you say, it is more than likely he will require to be kept up a little. You must give him bread steeped in strong ale, and you may give him the yolk of an egg now and then. It should be given raw, and be poured down his throat. When his excrement is firm and figured—dark brown tipped with white—he will be well. The purging must be continued till no more green slime comes away.

DUCKLINGS DYING (*Outlands*).—As they seem to die without a cause, and you do not state a single symptom, how is it possible for us to divine the source of death? Forty-five out of fifty-five dying thus unaccountably, suggests that something is eaten by them that is poisonous. They are not difficult to rear. When first hatched curd is the best food for them; and when three or four weeks old ground oats mixed in water with a little fine gravel in it, and whole oats occasionally for a change. If the ducklings are in a confined space they should have sods of growing grass in their water.

INCUBATOR.—We hear from a correspondent, that an incubator is to be sold on very reasonable terms, and that full particulars may be had from "Mrs. Beatty, Heathfield, Wexford, Ireland."

BOOK ON BEES (*E. R. S.*).—In a few days we shall publish a new edition of "Bee-keeping," very fully illustrated. Payne's hives are the cheapest and simplest. They can be had of Messrs. Neighbour. Your other questions we will find room for next week.

LONDON MARKETS.—MAY 18.

POULTRY.

There is still a good supply of poultry, especially of small chickens, consequent on the mild winter we have had. Trade is dull, and the demand very small for the season of the year.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	4	0	4	6	Guinea Fowl	3	6	4	0
Smaller do.....	3	0	3	6	Leverets.....	0	0	0	0
Chickens.....	1	9	2	6	Rabbits	1	3	1	4
Goosings	6	0	6	6	Wild do.....	0	8	0	9
Duckings	3	0	3	6	Pigeons	0	8	0	9

WEEKLY CALENDAR.

Day of Mnth	Day of Week.	MAY 26—JUNE 1, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock after Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
26	Tu	WHIT TUESDAY.	30.110—30.005	degrees.			m. h.	m. h.	m. h.		m. s.	
27	W	EMBER WEEK. KING OF HAN.	29.903—29.830	72—48	S.W.	.01	56 af 3.	57 af 7	31 0	9	3 17	146
28	Th	Mistletoe flowers. [BORN, 1819.	29.860—29.831	66—52	S.W.	.09	55 3	58 7	50 0	10	3 11	147
29	F	King Charles II. restored, 1660.	29.872—29.824	72—52	S.W.	.01	54 3	59 7	10 1	11	3 4	148
30	S	Toadgrass flowers.	29.872—29.418	73—54	S.	—	53 3	VIII.	32 1	12	3 57	149
31	SUN	TRINITY SUNDAY.	29.938—29.825	68—52	S.E.	.15	52 8	2 8	58 1	13	2 49	150
1	M	Stonewort flowers.	29.993—29.870	76—43	W.	.02	52 3	3 8	31 2	14	2 41	152
				76—40	N.E.	—	51 3	4 8	rises.	O	2 32	153

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 67.6° and 44.6° respectively. The greatest heat, 91°, occurred on the 28th, in 1847; and the lowest cold, 32°, on the 31st, in 1857. During the period 148 days were fine, and on 104 rain fell.

THE AMARYLLIS AND ITS VARIETIES.



IPPEASTERS are now generally to be found amongst collections of plants, and are increasing in public estimation every year. Those species which have been sent home from the West India Islands have reproduced seedlings infinitely superior in substance, more brilliant in colour, and of finer formation in both sepals and petals; which must be set down to the credit of in-and-in breeding and careful selection of parentage. Nor must

we forget the powerful influence exercised by the pen of Mr. Beaton, from the very time THE COTTAGE GARDENER was in its infancy, in stimulating a zest towards their more extended cultivation. His various papers, although I am only speaking from recollection, have a very distinct impression upon my mind, exhibiting as they do a perfect acquaintance with the whole genus, and conveying valuable practical hints on their cultivation. No one, not even excepting Dean Herbert himself, knew the varieties by headmark even to their minutest parentage better than he; and, as Mr. Fish has well expressed in one of his communications, his dissertations on the genus and its subdivisions constitute of itself enough to perpetuate a name.

There is first and foremost *formosissima*, a most beautiful velvety crimson sort with its peculiar contraction of the lower sepals which, by the way, has hitherto defied, so far as I know, all attempts at hybridisation. I have tried it in various ways with first-rate pollen, and *vice versa*, but to no purpose. This sort is invaluable for spring decoration, flowering generally during April in a cool house. It is an old-established favourite grown in many places where no other variety is to be found. With all the first-rate novelties there is none possessing much better substance; and therefore it has a decided claim upon our sympathies—besides it is a great favourite with the ladies.

Then there is *vittata*, another comparatively hardy sort, which has been the parent of a great many good seedlings, of which we believe *Johnsoni* is one of the oldest. The latter variety has reproduced numerous forms almost an exact counterpart of itself, the best of all the strains we have ever seen of it being *Johnsoni précieuse*. This variety excels the parent in quality and substance of bloom, and is likely to make an excellent sort to breed from. We have pods of it now by the pollen of *marginata conspicua*, which will in all likelihood have some progeny fair to look upon.

Then there is *solandraeflora*, a long-tubed sort, very interesting and beautiful, which now also has a good many representatives, of which *Graveana*, *Crocea grandiflora*, and *Delicata* may be said to be the best and most pro-

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minent. *Marginata grandiflora* also partakes of this same type, and all are exceedingly large as individual flowers and free growers.

There is *aulica*, an evergreen, requiring exactly the same treatment as *Vallota purpurea*, but rather more tender, and would suffer in a temperature which *Vallota* would tide over with impunity. If there is any use in recording a protest against the nomenclature, not universal nor general, but special as in this instance, why is this brilliant orange-scarlet *Vallota* called *purpurea*? There is nothing about it, so far as I can see, to justify the name; and the sooner it is changed the less queries will be suggested about it. Occasionally people who have no pretension to the knowledge of plants have been surprised why it should have been christened with a meaningless cognomen.

It is strange that this *Vallota* will not intercross with any of the *Amaryllises*. I have dozens of times tried it upon the stigma of free-setting sorts, such as *Ackermanni pulcherrima*, *Marginata conspicua*, *Johnsoni*, and others, with no good results. I was the less surprised at no effects on such sorts as *organensis*, *Ackermanni*, and *grandiflora*, because the scape of any of them never produces more than two flowers; but on such sorts as those above mentioned, which often produce four flowers, there was more room for comment.

One variety which found its way into our collection by a fortuitous occurrence, and which turns out to be something very distinct and fine, throwing up, as it has done this season, two flower-scapes, each producing eight flowers, seemed to be a sort that would suit *Vallota*; but after two or three careful pollen-applications both ways, there is nothing signified but barren results. I have, therefore, come to the conclusion that *formosissima* and this *Vallota* will not hybridise; and I should like very much to know if any of the readers of the *Journal* have ever tried and been successful with either or both of these. I know Mr. Beaton declared long since that neither he nor anybody else could hybridise *formosissima*.

All the other sorts, with one or two unimportant exceptions, seed freely by intercrossing, and thousands of seedlings can be raised at will.

The following are the sorts that have been proved and found to be the very best out of a numerous collection.

Ackermanni pulcherrima.—A very intense crimson of extra fine substance, producing four flowers from the scape. Form very good. This sort is easily known from having a round flattish bulb, something like the form of the Danvers Onion.

Ackermanni.—This is a bi-flowered sort, possessing a vigorous habit, and producing flowers often measuring 7 inches across. The form of this is not of the first style of excellence, but it is altogether a good ornamental sort of rich substance.

Bierii.—This is one of the finest-formed of the whole race of them, but a little deficient in substance. Colour white and pink, beautifully suffused; something in the way of *marginata conspicua*, but paler. It is a very free bloomer, producing from four to six flowers in the scape.

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Its foliage is very handsome, being of an olive-brown hue with faint purple veining, and it is distinguishable at first sight, although not in bloom.

Crocea grandiflora.—A fine orange-scarlet of good substance, with a dash of white at the base of the sepals and petals. Very showy.

Delicata.—Scarlet and white, with fine ornamental foliage, being banded with a broad undefined stripe of white down the centre of each leaf. Much the best of this colour. It is, however, rather a shy breeder, and is somewhat refractory, if I may so use the expression, in its reproductive tendencies.

Gigantea.—A very distinct sort of good form, the nearest approach to a scarlet self of any kind known to me. It grows freely with liberal treatment, but is about the easiest to kill of any in cultivation.

Graveana.—An immense-growing sort, generally producing four flowers of great size and good substance. It is the best fellow for Ackermanni in point of vigour of growth and size of bloom of any in our collection. It is an improvement upon *Crocea grandiflora*, and I reckon it much the best form and substance of the *Solandraeflora* section.

Holfordi.—Scarlet and white well "washed" together, producing an agreeable whole. Substance very good, and form also. This is a tolerably free grower to be so much in-and-in bred, and may be safely added to any collection.

Intermixta latipetala.—This is a very good crimson-scarlet self of the four-flowered section, rather shy in habit, and possesses no great tendency to multiply itself by offshoots.

Johnsoni précieuse, a fine, broad-petalled and sepalled variety of Johnsoni, of rich substance, with a band of white, much more clearly defined than in the old variety, running down the centre of each petal to the extremity. This and another one named *vera*, are much the best of the Johnsoni strain.

Marginata conspicua.—This is an exceedingly free-growing and prolific-flowering sort of the most handsome appearance, which everybody who grows bulbs should have. It is a white ground colour feathered with rose and crimson stripes, of excellent substance and good form. It seldom produces from the scape more than four flowers; but it blooms freely over the season.

Marginata grandiflora.—This is a long-tubed, very pale variety, rather more delicate than the other marginata, but is well deserving of a place. Ground colour white, with faint rose stripes over all the surface.

Marginata venusta.—It is not easy to distinguish this from *conspicua*, but it is the more rare, and, upon the whole, the better formed of the two. Some attribute their difference to a slight perfume in favour of the one in question, but my olfactory nerves were never sensible to any such sensation.

Monsieur Van den Hecke.—A large bi-flowered sort of the grandiflora order. Its form is good, but it is deficient in substance.

Psittacina Johnsoni.—A large, free-flowering sort, crimson and white finely blended, of good substance, and excellent form. This variety is probably the most prolific in flowering of the whole race, throwing up as many as three stems from one bulb, generally producing four flowers on each.

Psittacina vittata.—This is a lighter variety, partaking of the same character as the above, but more allied to the true vittata than the preceding one. Both, however, are excellent sorts, of fine form.

Venosa grandiflora is a very handsome-growing species, producing numerous offshoots. Flowers finely veined with crimson; large and fine.

Wheeleri.—This is a very wide-spreading sort, of very rich crimson colour and good substance. It is straggling in petal and sepal, but measures somewhere about 7 inches across, and is, therefore, well adapted for decorative purposes, although its merits will not pass muster before the Floral Committee.

We have recently added *Eclipse*, *Hawkensiana*, and *Unique*, which have passed muster as acquisitions in their way.

Upon the whole, the field is promising, for judging from the acquisitions that have been made when their cultivation was only limited to a few enthusiasts, we may anticipate great things now that ladies and gentlemen see their decorative value, and the ease with which they can be cultivated.—JAS. ANDERSON, *Meadow Bank, Uddingstone*.

two years, and wishes for instructions how to treat it. To this we may say, that if the climate and situation be a moist one it will not flower so freely as when these conditions are reversed. If the plant appears too rampant, cutting-in the roots may do some good, and thoroughly draining any superfluous water away, at the same time supplying the plant with a drier and poorer soil. Generally speaking the Banksian Rose, both white and yellow, does best against a south wall, but we have it against pillars also, but it does not flower so freely. In pruning it is best to cut away all the gross long shoots, and shorten-in the mere spur-looking ones which produce the flower. We usually prune ours twice, once about the middle of June, and again about the end of August, or when the growth of the season is finished or nearly so. Observe, it is the short-jointed, wiry-looking little shoots that produce the flowers, not the long ten or twelve-foot rods which we have often had, and which are useless excepting to increase the size of the tree when wanted. We do not expect any treatment whatever will have so good an effect in producing flowers as a fine, hot, dry autumn, but helps like the above will conduce to that; and, if not successful, we fear the evil lies in something beyond the reach of cultivation or artificial treatment.—J. R.

FOLIAGE VERSUS FLOWERS.

"WHAT new thing is coming out this year?" is a question that one flower-gardener puts to another, after the usual greeting and comments on the season and its peculiarities.

Every year certainly either establishes the reputation of something fresh, or, it may be, revives the character of something that had been lost sight of; and what is 1863 going to do for us? The advertising columns of gardening periodicals will, no doubt, offer many attractions in the way of new or improved varieties of plants already in cultivation, and possibly some new species as well as something startling may be put forth. The public are, however, somewhat wary of anything having a too-high-sounding character. Progress now-a-days is often obliged to be content with slow and gentle advances.

A really new species of plant may be a great acquisition, but an improvement in a Scarlet or variegated Geranium can hardly be expected to be many degrees in advance of kinds that we already possess. Still, as we are perfectly aware, perfection has not yet been arrived at. Then, what new acquisition is 1863 to present us with?

Last year I gave a favourable opinion of Mr. Veitch's *Amaranthus melancholicus ruber*, and the way in which the plant turned out at the end of the season confirmed all that I said in its favour. The new *Cerastium* that was introduced last year was variously received; but I cannot say I am sufficiently acquainted with it to give an opinion of it. At best it does not seem to differ so much from the former one as to be worthy the distinction of a separate specific name.

Last year, like most others, was favourable to a certain class of plants more so than to the others, and amongst those that did well here were yellow *Calceolarias* and *Lobelia speciosa*. The former were especially very rich, and the latter scarcely less so, both being decidedly better than I ever remember them to have been before—that is, they bloomed profusely, and continued for a much longer period than usual. I cannot say the same of Scarlet and other flowering Geraniums. They grew well enough, and at one time were very gay; but it was late in the season, and the bloom did not last long. Variegated Geraniums did better, I might say particularly well; but *Verbenas* fell so far short of their former reputation, that I expect both they and *Petunias* have lost caste considerably. *Gazanias* did pretty well, but most of the *Tropæolums* ran too much to leaf—the early part of the season was too moist for their flowering. The reports of other persons may, perhaps, be different from the above, certain localities being favourable to the well-being of certain plants, to which another place is not; but the general features of a season tell everywhere. 1860 was wet and unfavourable in all places, while the preceding two seasons were the reverse, and we were induced to try many tropical plants out of doors that had never been thought of before. Fields of Chinese Sugar Cane waved in the breeze, and plants flowered and ripened fruit outside that rarely did so before; and flower-gardeners in their anxiety to introduce novelties into their beds tried many stove plants previously regarded as almost too tender to stand in the greenhouse in summer. Some limit will, however, always restrict this. Delicate plants like *Begonias*, *Torenia asiatica*, *Pentas*

YELLOW BANKSIAN ROSE NOT FLOWERING.

A LADY writing from Bandon, Ireland, complains of a fine plant covering a wall 18 feet high not flowering during the last

carnea, and *Coleus Verschaffelti*, may succeed tolerably well in hot summers, but they cannot be expected to do so in an average one, and still less so in a wet cold season. The last-named plant was strongly urged as one suited to the flower garden, and certainly its appearance in-doors, and the facility by which it may be increased, lead one to form great expectations of it; but in the places where it was tried out of doors last year that came under my notice, it merely existed; that it thrive and looked well was more than could be said of it when I saw it. But it is quite possible if we have a hot summer again, that both it and many other things may do well. This, however, is not enough to establish the utility of such plants for all seasons; but as every year adds to our list of such novelties, it is likely we may have all the hues of this *Coleus* transferred to some other plant possessing the good qualities of the *Perilla*. While on this subject, I may say that the old Prince's Feather and Love-lies-bleeding are far from despicable members of the floral world, no annual that I am acquainted with continuing a longer time in an ornamental condition, and both deserve more attention than they often receive.

As regards the question of what will prove to be the great attraction of the present year, I will also venture to give a sort of qualified answer, and say that I believe the greatest addition to most gardens around London will be the more extensive cultivation of *Centaurea candidissima*. Its appearance in the few places where I have seen it was such as to commend it to every one having a flower-bed. That something more decidedly new may be forthcoming I have no doubt; but whether anything more really useful than this, has yet to be determined. I hope nurserymen and others who propagate for the million will let us have it at a reasonable rate. Hitherto, kept as it often has been as a potted plant, its increase has been slow. Now, as it is wanted more extensively, its propagation must be accordingly.

I am induced to offer the above rough outlines of last year's features, as exemplified in the products of the flower garden, and also with a view to call attention to the claim of the last-named plant, which hitherto has not been so generally recognised as I expect it will be hereafter. At the present time, judging from what I have seen, I have no hesitation in putting it at the head of all our white-leaved plants, including, of course, the variegated ones. The shape of the leaf, though not better than that of *Cineraria maritima*, is, nevertheless, good, as is likewise the habit of the plant, and I shall be much disappointed if it do not become one of the most fashionable plants of the day. It would, nevertheless, be advisable not to rest satisfied with this plant alone; improvement even on it may be possible, and something still more white may be forthcoming in time.

Other colours in foliage ought also not to be lost sight of, and some tints not hitherto thought of, may, perhaps, be brought out, so as to render the uncertainty there is in adverse seasons of obtaining bloom a matter of much less importance than now; and though the many beautifully graduated tints of the *Verbena* from white up to the darkest maroon may seem impossible to be represented in foliage, it is only necessary to say, that both extremes named are duly and truly imitated in colours of foliage, and time may possibly supply the remainder.

To those who doubt the possibility of foliage attaining pre-eminence over flowers, which the above remarks may imply as being not unlikely, I would just ask our readers to look round them, and see the proportion which foliage bore to flowers in 1862 compared with what it did ten years before that time.

Variegated *Geraniums* have been multiplied exceedingly since then, and various other variegated or white-leaved plants introduced, or their cultivation extended; while *Purple Orach*, *Perilla nankinensis*, and the new *Amaranthus* from Japan, have given new features altogether. That these plants are only the precursors of others giving other colours, I have not the least doubt. Whether it would be advisable to hastily abandon flowering plants is another question. Most likely people would not do so; but where early and long-continued appearances are concerned, in adverse seasons and ungenial situations the encouragement given to foliage cannot but be recommendable. Certainly the preference should never be on the side of foliage when flowers offer equal advantages. But as the planting-public are supposed to be the best judges, it is needless saying more than that I believe the introduction of plants with remarkable foliage either in colour or appearance will be most sought for after the present season, improvements on existing varieties of flowering plants receiving less attention.

Anything really good, whether it be new or a resuscitated

old plant, will always receive a due share of attention; and if I ventured to encourage the more general adoption of a plant likely to do good service I would say, By all means plant the one above alluded to—*Centaurea candidissima*—more extensively. If the ardent hybridiser wants a plant in which to work a revolution let him try *Lobelia speciosa* or its kindred species, and see if he cannot turn out as good a scarlet as he has a blue, leaving the habit and other features of the plant the same. Few plants were more generally admired in the past season as well as in the previous one than *Lobelia speciosa*, and I think that if its flowers could be dyed a bright scarlet it would drive the *Verbena* from the field.

That it is possible for this to be accomplished I have no doubt. Slowly and by degrees most of the popular varieties of fruits and vegetables, as well as flowering plants, were perfected, and cannot the same be done with *Lobelia*? Previous to the last two or three years the *Lobelia* only occupied the position of a second-rate bedding plant; last year it was unquestionably in the front rank, and that further honours are in store for it I have no doubt. Its compact habit, adaptability to most soils and situations, and the facility with which it may be propagated, all combine to render it acceptable. Without detracting from the merits of other plants, *Lobelias* have certainly been in the ascendant; and being capable of further improvement are likely to rise. The season of 1863 will, no doubt, present other novelties; and all that are good will be acceptable, and have full justice done to them.

J. ROBSON.

JOTTINGS FROM PARIS, 1863.

NO. 1.—L'EXPOSITION DE LA SOCIÉTÉ IMPÉRIALE ET CENTRALE D'HORTICULTURE.

"NOTWITHSTANDING that the Exhibition is open for so short a time, we hope that the large number of visitors may repay the Society for their skill and enterprise." In some such terms did *La France* speak of the Exhibition of the above Society, at which I had the honour of assisting, as our French friends term it, on the 9th of the present month of May. And what is the *short* time, do our exhibiting friends imagine, for which this said Exhibition was open—"from 2 to 6 P.M.?" Not at all: it was only open for seven days, from May 9th to the 16th inclusive; and more than this, the Judges had had the 8th all to themselves, for they were not called upon, as those on our side of the water, to get through their work in a few hours; but a whole day was given to their arduous labours. Now, this is taking matters very much as the French seem to take business in general, in a very free and easy sort of a way; but this "week" is an improvement on what it used to be. The Exhibition was held last year in the Palais d'Industrie, or, as it is now more generally called, the Palais des Champs Elysées, during the time that the exhibition of the works of living artists was being held; but as the Minister of Public Instruction insisted on its being kept up as long as that Exhibition—about two months, the exhibitors at last rebelled; and rather than lose their plants, determined to hold it elsewhere, and entirely on their own responsibility. In this they experienced some difficulty. The Champs Elysées was forbidden ground, as no more space was to be occupied there than at present, and it was necessary to obtain a spot in some central position. After considerable difficulty, a vacant space in the Rue Chaussée d'Antin, off the Boulevards, and, in fact, a portion of the ground which is to be hereafter appropriated to the Grand Opera House, which is now being built, and which will be the finest in the world, was selected; and on this the ingenuity and taste of the commission was exercised to make it fall in with the notions of the Parisians as to what a horticultural show should be. It will be at once seen that the fact of having a show open for a week, would in itself make a very material difference between ours and theirs. But there are other reasons which tend to this, a main one being the want of that extensive love of flowers which prevails in England; not but that the French love flowers, but they love them for bouquets, for house decoration, and for effect—they do not love them so as to give themselves trouble in their cultivation. There are very few amateurs in France such as we have in England, and many who go under that name are really persons who, although not growers for sale, grow some favourite flowers for those who are. We are accustomed to see in our own shows the nursery element largely manifested, but the amateurs run them very close, and are numerous; but at the French Exhibition they were almost entirely absent, and whether in fruit, flowers, or vegetables, the

productions came from those who are commercially engaged in the pursuit. There is one other reason which I think also adds to this difference, indeed it grows out of the last—viz., that as a rule the French nurserymen do not keep specimen plants, they cannot afford to do so; and hence the plants they send are diminutive indeed compared with those which come to our great exhibitions.

But to return to the Exhibition. The space enclosed by the tent was, I should suppose, about as large as that occupied by the one under which the Royal Botanic Society is held every year, the ground, however, being level instead of undulating. On entering the tent there was spread out before you a pretty grass garden, filling the centre of the parallelogram which the tent comprised, and the grass having beds arranged in it, in which the plants were plunged in pots: consequently, although occupying a tolerably good space, the plants in flower formed but a small portion of it; Yuccas, Norfolk Island Pines, Eucalyptus, and collections of Conifers being planted in the grass. A broad walk ran all round this grass garden, while a narrow stage of about 4 feet ran round the entire length of the tent. On this were arranged the vegetables, fruits, and some of the flowers, cut and in pots. On either side of the door as you entered there was a collection of Roses, contributed by Fontaine et Rénavol, of Versailles. These were standards, half-standards, and dwarfs planted out, and well arranged for effect; but the individual flowers were poor, and nothing of novelty beyond Madame Boutin and Vicomte Vigier, both of which seemed good flowers. There were two beds of Fancy Pansies, which had a pretty effect and suggested the desirability of their use for early spring gardens. The flowers themselves were not better, if so good as those by Mr. Dean and Messrs. Downie & Co. in our own country. Then there was another bed containing a collection of Pelargoniums, Verbenas, Cinerarias, and Fuchsias, amongst which the most noticeable was a collection of the new Italian Verbenas, from which I hope we shall obtain quite a new start, as they are striped, spotted, and mottled in the most curious manner. Not far from this was a charming little bed of one of the best bedding Verbenas I ever saw. It was raised by one of the numerous small growers around Paris, and is called Mademoiselle Lefebvre, a fine rosy crimson, very short-jointed, and one mass of bloom. It was, of course, in pots; but I shall be very much mistaken if it be not one of the best for the purpose that we have. Then there was a bed containing three varieties of Zonale Pelargoniums raised by M. Jactot, head gardener at the Château de Bagatelle, at Neuilly—Prince Imperial, which was let out this spring by Rougière-Chauvière; Fairy Labrousse, a fine salmon; and a white, which will, I believe, throw Madame Vaucher far into the shade. It is dwarf and very free-flowering, and seems to be a beautifully clear white. Of course, as to whether it will retain this out of doors is another matter. It was named Madame Barillet, and has passed into the hands of M. Rougière-Chauvière, who will send it out in autumn or spring next. There was a fine collection of tree Pæonies, from M. Dupuy-Jamain, some of which were truly enormous, and very brilliant in colour, but we fear they flower at a time when we could not rely much on them in our climate. Our kind and excellent friend, M. Margottin, of Bourg-la-Reine, had a nice lot of Azaleas; among them a very good seedling of his own, a clear white, and some neatly-trained standards.

At the further end of the tent were two collections of Conifers, from Messrs. Morlet, near Fontainebleau, who exhibited amongst others small plants of some of the new Japanese Conifers; and M. Honoré Defresne.

New introductions were exhibited by Messrs. Thibaut et Keteleer, Rougière-Chauvière, and Lierval, and comprised many of the new Japanese novelties introduced by Messrs. Standish and Veitch, and other plants of value, but nearly all in a very small state.

Orchids were contributed by Thibaut et Keteleer, Rougière-Chauvière, and Luddemann, the latter formerly gardener to M. Pescatore, but now a nurseryman. These collections were very different to those which we are in the habit of seeing: thus M. Luddemann's collection contained thirty-two varieties, but a space of 10 feet by 4 held them all. Few of the plants had more than one spike of bloom on them, and were very different from those which Mr. Williams, Mr. Warner, &c., send to our exhibitions.

Then there were three or four collections of Cacti, Melocacti, Agave, Aloe, &c.—a sort of thing quite unknown at our shows, but apparently exciting considerable interest in France. That

the plants were not very large may be gathered from the fact, that some of the collections comprised 230 varieties, and that a space of 10 or 12 feet by 4 held them all.

Cut flowers were sent in small numbers. There were two collections of Tulips and one of Pansies, which would have provoked the risible faculties of Messrs. Headly, Turner, Betteridge, or any of our Tulip-growers; and, of course, after the first day they exhibited a sorry spectacle of faded charms, of which, to tell the truth, they had but little at the best of times.

I find that my observations have run on, so that I must reserve my notices of the vegetables and fruits for another time, and, perhaps, it will be well to do so in connection with the markets, especially the Halle Centrale. It is sometimes said, "They manage these things better in France," and it is true of many things, but certainly not of flower shows. They did what they could with the materials at their disposal, and the taste for which they are proverbial was evident here. What they would do if they had the material that we have one cannot conjecture.

I may add that there were two English exhibitors. Mr. Arthur Henderson sent a plant of his Tropæolum Ball of Fire, and just at the last moment as I was starting off I cut off a number of blooms of Auriculas, and am bound to say that they excited quite a sensation, as the flower as we grow it is almost unknown in France. Nothing could exceed the politeness with which I was treated by all concerned—a rule to which one rarely meets an exception in matters connected with horticulture at home or abroad.—D., Deal.

MR. SALTER'S NEW DOUBLE PYRETHRUMS.

MR. SALTER, of the Versailles Nursery, Hammersmith, who is so celebrated for his admirable Chrysanthemums, has succeeded in producing a formidable rival to that flower in the shape of a race of double Pyrethrums, which in size and appearance bear a striking resemblance to Chrysanthemums—but with this difference, that they bloom in May and June. We saw these flowers under very disadvantageous conditions as regards weather—in a day when rain poured down, and the wind blew in heavy gusts, both of which circumstances must have detracted much from the appearance which the blooms would otherwise have presented; and yet we can say that they were entitled to rank among the most attractive flowers of the season; and although intended for out-door decoration, they might even be introduced into conservatories with excellent effect.

There are several varieties, all of which are not yet in flower; but the finest in our opinion is one called Versailles Defiance, which is a perfectly double ranunculus-shaped flower, fully 3 inches across, and of a light-reddish pink; Purple King has double flowers, some of them quite as large as the preceding kind, but with a high anemone centre, in colour of a dark purple carmine; Brilliant, also anemone-flowered, is 3½ inches across, and of a beautiful bright rosy carmine; Bride is rosy flesh and, like those which follow, is likewise of the anemone form. Pink Beauty is bright pink with a very high centre; Striated, rose striped with white; Album Plenum, 2½ inches across, bluish white; Madame Foucard, bluish; and Bridesmaid very delicate bluish pink. Princess Alexandra is a pure white, nearly 3 inches across and remarkably double; Amelina, purplish-pink; Hendersoni, a deep rosy red; and Rosa Alba bright rose with part of the petals white, the blooms measuring 3½ inches across. Charles Baltet is a large and very double rosy pink, while Thomas Massart is a very pretty delicate pink, and Defiance a very large and fine bright rose, the flowers being nearly 4 inches in diameter.

Taking a hasty glance over the houses, we observed among the British Ferns a variety of *Scolopendrium vulgare laceratum*, with the fronds very deeply cut at the edges, and forking; another variety, *polycuspis*, had the extremities much branched. The North American *Osmunda cinnamomea* was throwing out panicles, which are seldom seen in this country; and *Osmunda interrupta* was also in a similar condition.

In a house devoted to hardy variegated plants, a variety of *Sedum Telephium* or *Orpina*, called *picturatum*, had the leaves beautifully mottled with rose; *Oxalis corniculata picturata* was also very pretty, the leaves being brown mottled with bright pink, instead of being green. *Funkia japonica picta* from Dr. Siebold had large yellowish-green leaves with dark-green edges; and in *Convallaria angustifolia* (?), another Japanese plant, the leaves were prettily edged with white. Another ornamental-

foliated plant was a variety of the common Comfrey, endowed with a name of formidable length—*Symphytum officinale variegatum superbum*, in which the leaves had a margin of yellowish-white. *Artemisia maritima*, Mr. Salter states, forms an excellent cut-leaved plant for bedding-out, the foliage turning quite white when out of doors. We also observed a new *Centaurea* with woolly leaves, which measured 17 inches long by 6 broad, and which, we are told, become much larger and as white as those of *C. candidissima*.

Out of doors *La Pie*, or the *Magpie Pansy* was growing in one of the beds, and Mr. Salter gives it a high character as a bedder, and certainly its violet-purple flowers blotched on each petal with white; have a very ornamental appearance.

CRYSTAL PALACE FLOWER SHOW.

THE first of the great Shows at the Crystal Palace was held on Saturday last, and the day, though cold for the season, was fine, and even warm in the sun. But the weather is a matter which one need concern himself very little about when the Crystal Palace is in question; for you can go there, stay there, and come back from there without being from under cover.

The display of flowers, as might be expected from the liberality of the prize list, was most excellent; and what, no doubt, was equally satisfactory to the Company, the attendance of visitors was large, severely taxing, as we know to our grief, the excellent arrangements of the Brighton Railway.

Of Stove and Greenhouse Plants there were some excellent collections, several of which, however, having appeared at the Royal Botanic Society's Show, reported last week, had lost much of their freshness to our eye; and indeed not a few of the plants were what is termed "too far gone."

Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, was first with fifteen, among which were fine specimens of *Allamanda cathartica*, with its rich yellow flowers; *Ixora coccinea*, *Aphelaxis macrantha purpurea*, *Eriostemon buxifolium*, *Azalea Murrayana*, *Erica depressa* and *Cavendishii*, *Tetratheca ericeifolia*, *Chorozema Lawrenceana*, and *Pimelea spectabilis*.

Mr. Green, gardener to Sir E. Antrobus, Bart., Lower Cheam, who came second, had likewise an excellent collection, among which were the white-flowered *Dracophyllum gracile*, *Franciscea calycina*, *Hedera macrostegia*, and others, all of which were well grown, and did credit to that veteran exhibitor. Collections of fifteen also came from Mr. Rhodes and Mr. Baxendine.

In the class for twelve plants, Mr. Chilman, of Ashted House, Epsom, had the first prize. Among his specimens were a fine *Acrophyllym venosum*, and a handsome *Erica Cavendishii*.

Messrs. J. & J. Fraser, who had, among others, the orange scarlet *Leschenaultia intermedia*, and a fine plant of *Erica ventricosa coccinea minor*, came in second.

In the class for eight plants, a fine specimen of *Allamanda Schottii* was shown by Messrs Lee, and in other classes a very fine plant of the same kind was shown by Mr. Page. *Hoya bella* and *Erica ventricosa coccinea minor* were shown in fine condition by Mr. C. Smith, of Norwood Grove. Mr. Penny, of Regent's Park, Mr. Kaile, Mr. Baxendine, Mr. Green, and Messrs. Lee, were likewise exhibitors in the different classes.

Azaleas constituted of themselves a brilliant feature in the display, and, probably, no other flowering plant could have shown to such advantage at the corners where the nave and transept intersect as these. Mr. Turner's plants were magnificent, *Murrayana* and *Juliana* in particular. The others consisted of *Perryana*, *Mary*, *Alba Magna*, *Gem*, *Glory of Sunninghill*, *Magnificent*, *Criterion* (past its best), and *Optima*. For this collection he received a first prize; and he also had the second for another fine collection of ten, containing in addition to several of those already named, *Arborea purpurea*, which was literally a mass of flowers.

Mr. Turner was again first for six plants, among which were included fine specimens of *Gem*, *Extranei*, and *Admiration*.

Mr. Page, Mr. Smith (of Norwood Grove), Mr. Chilman, Messrs. Fraser, and Mr. Lavey also exhibited *Azaleas*; whilst new kinds of the same flower, most if not all of which have been already noticed in these columns, came from Mr. Turner and Messrs. Ivory & Son.

Of tall Cacti, unquestionably the finest were those of Mr. Green, consisting of splendid flowering specimens of different *Epiphyllums*; and a very good exhibition of the same class of plants came from Mr. Waters Sydenham.

In Cape Heaths, magnificent specimens were exhibited by Messrs. Jackson & Son, of Kingston; those of Mr. Peed being also very fine, especially *Ventricosa magnifica*, a beautiful waxy pink. From Mr. Page came a fine plant of *Victoria Regina*; and from Mr. Young, gardener to W. Stone, Esq., Havant, and Mr. Chilman, there came also good collections. The varieties were mostly the same as those seen at the Regent's Park.

The Orchids, too, of which there was a goodly show, were, with but few exceptions, the same as those exhibited on that occasion. For a collection of sixteen, Mr. Baker, gardener to S. Bassett, Esq., Stamford Hill, took the first prize. Among his plants were a magnificent *Cattleya Mossiae*, *Anguloa Clowesii*, *Lælia cinnabarina*, and *Dendrobium macrophyllum giganteum*. Mr. Bullen again exhibited several very fine specimens, including a tub of *Orchis foliolosa*; and Mr. Peed, Mr. Page, and Mr. Woolley were also successful in taking prizes in this class. Mr. Penny had a magnificent *Lælia purpurata*, with four fine spikes *Vanda suavis*, very fine; Woolley's variety of *Sobralia superba* with three fine spikes; and *Anguloa Ruckeri*. Mr. Lovell, Nutfield, who gained a second prize for a collection of ten, had *Cattleya Mossiae*, with seven blooms of the largest size; *Dendrobium tortile*, with a profusion of flowers; and *Lælia purpurata*, which is always splendid. From Messrs. Jackson came *Phaius Wallichii*, with numerous fine spikes; and Mr. Wiggins, of Isleworth, Mr. Green, and Mr. Woolley, were also exhibitors.

Pelargoniums were large and covered with bloom. Mr. Bailey had the best; The Belle, Scarlet Floribunda, and *Desdemona* being some of the finest.

In Fancies, Mr. Turner and Mr. Shrimpton exhibited some beautiful plants, which were complete masses of bloom. Fairest of the Fair, *Delicatum*, *Clemathe*, *Ellen Beck*, *Modestum*, and *Undine* were some of the finest.

Roses in pots were exhibited by Mr. W. Paul and Messrs. Lane and Son, who had splendid plants of *Lælia*, *Charles Lawson*, *Paul Perras*, *Comtesse Mole*, *Baronne Prevost*, and *Souvenir d'un Ami*, the latter from Messrs. Lane being a stately specimen loaded with bloom. Messrs. Paul & Son likewise exhibited, receiving a third prize. Mr. Turner and Mr. W. Paul had, besides, excellent plants in eight-inch pots. Cut Roses were in great abundance and beauty, ten boxes coming from Messrs. Paul & Son, and eight from Mr. W. Paul.

Calceolarias were exhibited in great perfection by Mr. James, of Isleworth, also Mr. Reid and some others; and *Pansies* by Messrs. Downie, Laird & Laing, Hooper, Shenton, Tomkins, and James. *Verbenas* came from Mr. Treen, of Rugby, and Messrs. Perkins, of Coventry; *Tulips* from Mr. Hunt, of High Wycombe, and Mr. Turner.

Of other objects, Mr. Williams, of Holloway, had in a collection of fine-foliaged plants a noble *Gleichenia flabellata*, a beautiful plant of *G. dicarpa*, and a very fine *Cyathea excelsa*; and Mr. Hutt, gardener to Miss Burdett Coutts, brought a magnificent specimen of *Cibotium Schiedeii*, *Latania borbonica major*, and *Rhopala de Jonghii* being also very fine.

Corypha australis, from Mr. Young, of Highgate, was immense; *Cycas revoluta*, very handsome; and he had also a large *Hippomane spinosa*. *Cibotium princeps*, and *Cordylina indivisa* from Messrs. Lee, were also remarkable.

Exotic Ferns came from Mr. Lavey; British Ferns from Messrs. Ivory; and some nice pans of *Lycopods* from Mr. Fox.

The pretty variegated *Lonicera reticulata* grown in the open air, came from Mr. Shenton, of Hendon; seedling *Pelargoniums* from Mr. Hoyle; and there were also several pretty arrangements of flowers in baskets, and for the dinner-table.

FRUIT.

Fruit at this early period of the season could hardly be expected in great quantity, but what there was, was good.

Of Black Hamburg Grapes, several excellent bunches and baskets were shown, the best three bunches coming from Mr. Hill, gardener to R. Sneyd, Esq., Keele Hall; these, though not so large as those of some exhibitors, were very compact, and the berries were large and finely coloured. Mr. Clement, of East Barnet, was second, and he had also an excellent single dish as well as a 10-lb. basket, and large bunches of *Black Prince*.

Mr. Frost, of Preston Hall, had a second prize for a fine basket, but the berries were not so well coloured; and Mr. Turnbull of Blenheim, Mr. Monro, and some others had also very good exhibitions of the same variety.

Of the Muscat of Alexandria, large bunches were shown by Mr. Horwood, and for the season the berries were very well coloured indeed. These well deserved the first prize that was

awarded them. The basket of the same variety from the same exhibitor was equally good. Three good bunches of the Grizzly Frontignan came from Mr. Henderson, of Coleorton Hall.

Pines were very good. A Black Prince weighing 8½ lbs., came from Mr. Cox, gardener to A. Royd, Esq.; and one nearly as large from Mr. Roger, of Taplow, both being handsome fruits. Good-sized Queens came from Mr. Barnes, of Bicton, and others. Altogether there were twenty-three fruit shown.

Violette Hâtive Peaches from Mr. Evans, and Royal George from Mr. Henderson, of Trentham, were well ripened and received first and second prizes. The Violette Hâtive Nectarines from Mr. Henderson, were also excellent.

Of Cherries, the Bigarreau Napoléon and Elton were both fine, especially the former. Mr. Tillery had Black Tartarian, well ripened; besides which there were several good dishes of May Duke and other kinds. Magnificent fruit of Sir C. Napier were shown by Mr. R. Smith, of Twickenham; British Queen, large and fine, by Mr. Tillery, the former exhibitor having also Sir C. Napier, Empress Eugénie, and British Queen; and Mr. Turner, of Slough, President, Oscar, and Sir C. Napier; but Mr. Smith's exhibition was the finest.

Several good Green and Scarlet-fleshed Melons were shown; also, Vines and Strawberries in pots, Figs, and two large and handsome Cucumbers, one of them measuring 30 inches long, but the name was indistinctly written.

GARDENIA CULTURE.

MUCH as has already been written and rewritten about this, which is, I think, the most lovely exotic evergreen we possess, yet I am not without hope that I may be excused for again referring to it.

I commence by planting strong healthy cuttings of Fortuni, florida, radicans major, radicans, and citriodora. It may be, some of the others would succeed equally well, though I have ever been cautious of varying the general stove treatment as concerns them. The cuttings struck, or nice young plants procured, their whole first season's growth should be made upon a stage in the stove; never giving a larger pot than a 48 the first year, pinching off any leading ill-placed shoots, giving occasional waterings with not too strong manure water, and not allowing any flowers to expand if any should show.

I will now suppose the plants to be beginning to grow in the March of the succeeding year. Let them make their first start in the pots (48's) of last year; when the shoots are showing the third pair of leaves pinch all back to four leaves each, and when they are about breaking afresh from the young shoots repot them, putting them into large 32's, carefully picking out as much of the old soil as is possible without injuring the ball generally or the roots; giving no manure water until you see that the roots are getting thick round the edge of the soil in the pot, when a little—but only a little—weak manure water may be given.

The chief requisite in the autumn is a profusion of healthy short-jointed wood. To obtain this, should your plants do well, you will have to pinch back any leading shoots to four leaves during the season. There need be no fear of pinching or even cutting back, so long as the knife is kept away from all but the growth of the current year.

Towards October avoid giving any but clear water, and place the plants more in the sun.

To ripen the wood gradually give the plants more sun, less water, and keep around them a drier atmosphere, reducing the temperature gradually as the days decrease in length, leaving it during midwinter at from 45° to 50°. If at times with a dryish atmosphere they are in a temperature of even 40° it will in no way injure them.

About March, as the light and heat increase, they will show signs of active growth, and then any loose soil upon the surface should be removed, and some good fresh soil be used for surfacing. Give plenty of liquid manure (strong now), and you may expect from eight to a dozen flowers, and these fine for the size and age of the plants. Give a nice moist growing atmosphere, and a temperature of from 60° to 70°. When they have finished flowering give another small shift into a 24 or 16-sized pot, and proceed again as above. I object to large shifts with excessive heat, as tending to produce large growths and but few flowers, besides taking up so much room.

With the above treatment the plants in the 16-pots might

produce some twenty-four flowers upon a surface of about 1½ foot in diameter upon a Fortuni or florida; more in comparison upon radicans.

There is one peculiarity about citriodora that I may mention—it is very prone to throwing up young growths from the base of the plant: these, if not pinched back when a few inches high, not pinching them out altogether but checking them, will at times so monopolise the sap of the plant as to cause all the old wood to wither and die. It would be as well, I feel convinced, to cut out all eyes below the surface before the cutting is placed in the cutting-pot.—W. EARLEY, *Digswell*.

MR. BULL'S PLANT ESTABLISHMENT AT CHELSEA.

MR. BULL is so well known as an exhibitor of valuable novelties at the metropolitan shows, that some notes taken on a recent visit to his establishment may not be unacceptable; at the same time it must be observed that his collection is so large that any notice of it in the limited space at our command must be far from complete.

It is to new and rare plants that Mr. Bull more particularly devotes his attention, and that his stock is most extensive may be judged from the fact that it occupies fourteen large houses, including seven Geranium-houses, one of which is 100 feet long.

On entering from the King's Road by the glass dome, we come into the first conservatory, which is gay with Azaleas and other flowering plants, relieved by the plentiful introduction of Australian Ferns, and the handsome fern-like Grevillea robusta, which forms an appropriate companion plant to these; besides which there are Orange trees both in flower and fruit, and one of the finest plants in the country of the new Araucaria Cookii.

On each side of this conservatory are wings, one occupied by the offices, the other by ornamental stands for drawing-rooms, filled with pretty variegated plants, as Caladiums, Maiden-hair Ferns, Begonias, the variegated Cyperus, Aphelandra Leopoldi, &c. There are also a number of Fern-cases of different patterns, under two of which were fine specimens of the Killarney Fern, and the beautiful New Zealand Todea pellucida.

The winter garden, an extensive space covered with a lofty span-roof, is the next house; and immediately facing its entrance is a majestic tree Fern, Cyathea serra, 25 feet high, whilst elsewhere are variegated Aloes and Yuccas, Grevilleas, Acacias, Dracenas, Palms, &c., giving the house an exotic appearance; and no one can fail to observe the Norfolk Island Pine, one of which could not measure less than 20 feet in height, and there are others nearly as tall.

Another remarkable object was a noble Cyathea medullaris, the ebony-like stems of which have a striking appearance. This with its congener C. dealbata is admirably adapted for conservatories. There were also a very handsome Cycas revoluta, which from its beautiful plumage-like foliage is always effective; Gleichenia flabellata, 5 feet high, and nearly as much through; Indian Azaleas, some of them 8 to 10 feet high; Dracena australis, between 11 and 12 feet high; Yucca aloifolia variegata, standing about 6 feet high in slate tubs; a lot of standard Bays with very symmetrical heads; also Laurustinuses, the same as are employed at the Horticultural Gardens at Kensington; yellow Rhododendrons, and miscellaneous flowering plants; and Acer negundo variegata, which from its pretty white variegation is employed as a relief to the green foliage.

To effect shade in this large structure, Vines cover the roof and festoon the columns supporting it, and are likewise trained over arched trellises at the sides. Mr. Bull states that he obtains excellent crops, and notwithstanding the general impression that Grapes and plants cannot be grown together, his experience has shown that in large houses at least, both can be successfully cultivated. The roof being very light, and presenting no adequate support for a ladder, there is a platform running on a railway down the centre of the house, so as to permit of the crops being gathered, and training, &c., performed.

On the right and left of the winter garden are stoves 70 feet long full of the new plants, for which Mr. Bull has made himself celebrated, one of them being filled with fine-foliaged plants, and having as a whole a very ornamental effect. Among the inmates of these structures were the extremely rare Madagascar Silver Palm, Areca dealbata, the gracefully arching foliage of which is silvery on the under side; a new Dieffenbachia, from Brazil; the formidable prickly Hippomane longifolia, the hand-

some variegated-leaved *Musa vittata*; *Anthurium leuconeurum*, from South America, with deep green caladium-like leaves with conspicuous white veins; a new species of the same genus also from South America; and those splendid fine-foliated plants *Alocasia metallica* and *macrorhiza variegata*, the lustrous metallic leaves of which form so important a feature in a collection of fine-foliated plants. *Thrinax elegans* is a very ornamental miniature Palm for drawing-room decoration, for which purpose its dwarf habit of growth peculiarly recommends it. *Echites argyræa* with dark green leaves and silvery veins will, to all appearance, form a desirable addition to ornamental-foliated climbers, of which there is a great paucity at present, but what like the flowers are is as yet unknown.

Of new *Caladiums* there was an abundance, and of these mirabile, regale, *Cannaerti*, *Devosianum*, *Van den Hecken*, and *Thelemanni*, with the fine Bornean species, *Lowii*, were some of the best.

Of other fine-foliated plants *Dracæna ferrea variegata* had leaves remarkable for their brilliant crimson. We also saw a new *Justicia* with beautifully variegated leaves. *Cyperus alternifolius variegatus*, one of the most effective of variegated plants, is here kept in a perfectly variegated condition by potting it in pure river sand, and affording a liberal supply of water. This is a secret worth knowing, as, in many instances, probably from being grown in too rich a soil, the plant reverts in a great measure to its original green form. Besides these many other very ornamental plants might be enumerated, such as *Latania rubra* and *Verschaffeltii*, *Cupania Pindaiba*, &c., and we must not omit to mention *Ouvirandra fenestralis*, the Madagascar Lace Plant, which was growing in a tank in one of the stoves, the leaves floating in glass bowls through which they could be readily seen, and according to their development between 1 foot and 1½ foot long, including the stalk. The extremely pretty *Clorodendron Thomsonæ*, with its white bracts contrasting with the vermilion petals, likewise formed an attractive object.

Medicinal and official plants are grown in considerable quantity; and among such might be seen the Bitter Cassia, Peppers of various kinds, Cubebs, Balsam of Peru, Coffee and Tea plants, Cinnamon, the violet-coloured Sugar-cane (*Saccharum officinarum violaceum*), &c.

In the Orchid department was *Pogonia discolor* from Java, which, with its olive-green leaf abundantly covered with reddish-golden hairs, was a great object of attraction at the last spring show at Regent's Park; and there were many pretty *Anæctochilus*, such as *Dayii*, and *argyræa* with its green and silver leaves. Fine specimens of the Fox-brush *Erides Fieldingii* and some others of the same family were rooting with extraordinary freedom in cocoa-nut refuse, and seemed to be luxuriating in it; and there were besides many other species of the same genus, such as *Larpenæ*, *Schroederi*, *Lobbi*, as well as the new *Cypripediums* *Stonei*, *Hookeri* with its prettily marbled foliage; the rare *Lowii*; *Dendrobium lituiflorum*, which recently brought such high prices at Stevens's; *Vanda Batemani*, &c.; together with an abundance of well-known species which it would be tedious to enumerate.

To *Begonias* one large house is almost entirely devoted, in which, besides several hundred seedlings, embracing an endless variety of variously-marked kinds, there were assembled numbers of named varieties—of which *Secrétaire Morren*, *Adolphe Pollack*, *Frederic Seismeyer*, *Helena Uhder*, *Dædalea*, *imperialis*, *imperialis smaragdina* and *longipila*, are some of the newest and best.

In the same house with the *Begonias* was a magnificent specimen of *Gleichenia dicarpa*, forming a beautiful mass 6 or 7 feet high, and probably as much in diameter. And in other houses were *Cibotium* princeps, equally remarkable; the new Golden Maiden-hair Fern from Lima, *Adiantum chrysophyllum*; *Adiantum Feei*, a handsome *gleichenia*-like species; *Laucheana*, the best of all the Golden *Gymnogrammas*; and the pretty tasselled *Wetenhalliana*; also *Asplenium flabellulatum* and *racchirhina*, both of which are very distinct and elegant species, the former from Mexico, the latter from Brazil. Besides the above there were numbers of variegated, including the remarkable *Pteris nemoralis variegata*, which is intermediate between *argyræa* and *tricolor*. In addition to these may be noticed several new hardy Ferns, as *Athyrium Filix-femina sagittatum*, a very pretty form of this species, which had a first-class certificate at the last meeting of the Floral Committee; *Osmunda regalis cristata*; and the handsome Japanese Ferns, *Lastrea opaca* and *Woodwardia orientalis*.

In the greenhouse department, besides the plants already

referred to in noticing the winter garden, many others deserve mention—such as *Rhynchosia albo-nitens*, a very ornamental climber with bright green leaves irregularly variegated with white, and having violet mauve flowers. *Yucca lutea-lineata* and *Y. alba-spica*, the last a very rare and peculiar plant, the narrow leaves being edged with white filaments. *Stokesii* is another variegated form of the same tribe. To these it may be added there were some handsome specimens of *Von Siebold's* *Chamærops excelsa*, and *Araucarias* *Bidwilli*, and *Cunninghami glauca*, the last a very desirable novelty.

To *Azaleas* one house is entirely devoted, and it contains many new varieties; one of these named *William Bull* is just being sent out. Its flowers are of the largest size and of unusual substance, in colour dark crimson shaded with violet on the upper segments. Waxwork, with large flowers, white blotched with purple; and *Fairy*, flesh spotted with crimson and edged with white, are also very fine; and to these may be added *Dieudonné Spæ*, *Madame A. Verschaffelt*, *Hortense Vervaene*, and *President Clæyes*.

The *Pelargonium*-houses are filled with a multitude of seedlings as well as named varieties. The following are a few of the best in the different classes. Of spotted kinds—*Theophraste*, quite new in colour, of a rich fiery red shaded with violet to the centre, light throat; *Gloire de Petit Bicetre*, also a new colour, dark crimson violet centre and spotted with maroon; *Junon*, International, *Fireball*, *Achille*, and *Viceroy of Egypt*. In *Fancies*—*Lovely*, *Bertha*, *Charm*, and *Lady Dorothy Nevill*; and in the *Zonale* section—*Beauty*, *Enchantress*, *Lucilla*, *Transcendent*, *Bonnie Dundee*, *Alfred*, and *Rosamond*. Conspicuous among the variegated kinds was *Queen of Queens*, which combines an excellent pure white variegation, with a profusion of scarlet flowers. This variety is well worthy of cultivation, and we understand that a bed of it has lately been supplied to the royal gardens.

Petunias have a house devoted to themselves, which is crowded with the splendid varieties which Mr. Bull sends out, of which *Captivation* and *President* are particularly fine, and *Lady Maria Scott*, *Beauty*, *Adeline*, *Vernon*, *Silver Spot*, *Ensign*, *Startler*, and *Marmion* are also of great merit, as well as *Charmer*, a crimson and white double.

The new *Mimulus*es form of themselves a very interesting feature. These are the result of a cross between the *Chilian* species *cupreus* and *Gaiety*, a large-flowering sort. The blossoms are about 2 inches across, and present an infinite variety of coppery red markings—blotches, belts, or specks—on a yellow ground, and of yellow specks or blotches on a dark ground. Apart from their extreme beauty, they possess the merit of being of dwarf habit; and altogether they may be regarded as constituting a valuable acquisition to our gardens. In one house there are hundreds of these *Mimulus*es, and they are likely to continue in flower for a long time.

Mr. Bull is now becoming well known for the new *Fuchsias* and *Pentstemons* which he annually sends out, and of these, as well as *Gloxinias*, there are extensive collections; but space will not permit us to do more than mention them, as well as many interesting Japanese plants, such as the beautiful-foliated *Loniceræ reticulata*, figured in the *Florist* and *Pomologist* of September last, the *Umbrella Pine*, *Retinospora obtusa*, *Bambusa variegata*, several handsome variegated *Euryas* and *Euonymuses*, the pretty *Serissa foetida variegata* which Mr. Bull received from Japan through Dr. Siebold, and the plain-leaved female *Aucuba*.

ORCHARD-HOUSES.

OWING to causes unnecessary to explain, I have been prevented replying to Mr. Rivers' kind invitation to my visiting his nursery at Sawbridgeworth. I fear, also, I cannot do myself the honour of inspecting his orchard-houses and their contents at the present time, but it is possible I may do so in August. For many reasons I prefer the latter time, not the least perhaps is, that it is a less busy period at home. I, therefore, thus publicly thank Mr. Rivers for his courtesy; and although I am unable at the present time to accept his invitation, and may also be prevented at the later period mentioned, I hope, nevertheless, to be able at some time to see his collection of trees in pots, and their modes of growth, and will strain a point to do so the present season. I, however, expect to hear more about orchard-house fruits from other quarters, and the subject seems to be warmly taken up by other writers in THE JOURNAL OF HORTICULTURE. The coming metropolitan and other shows

socket end of the knife a crane neck is attached, rising not perpendicularly but obliquely 1 inch from the blade, as shown at B, and, entering the shaft, is covered over there for security, with an iron ferule of $3\frac{1}{2}$ inches in length. The handle C is made of well-seasoned deal so as to be light, is 8 feet long, three-quarters of an inch in diameter where the socket of the blade is fixed, and $1\frac{1}{2}$ inch in diameter at the extreme end. With the crane neck placed as described, when the lower side of the knife rests level on the ground, the extreme end of the handle will be about $3\frac{1}{2}$ feet perpendicular from the ground. When the man taking the handle in both hands, the end just resting against his side, sweeps the blade right and left of him, he will clear the lawn of daisies as he marches along for a width of 15 feet easily, and with much less trouble and toil than he would clear as many inches with the lumbering daisy-rakes. Of course, the knife merely decapitates the sweet, modest, wee things, that would be beautiful anywhere else than on the green lawn; but if the sun shines the daisies will soon be shrivelled up, and unseen and forgotten, like many other things that are good and beautiful.

AMMONIACAL LIQUOR AND OTHER GAS REFUSE AS MANURES.

I KNOW you will be glad to learn that I read and practised from Mr. Johnson's pamphlet on the refuse from gasworks; but as far as my experience goes 200 gallons, as there recommended, is too much to apply at once to an acre. I find that 50 gallons do better; and if you contrast the strength of guano with that of gas liquor, it is manifest that 600 lbs. of guano will introduce about 50 lbs. of ammonia to the ground, and 200 gallons of the liquor will give 200 lbs. of ammonia. I am also using the lime and the tar of the gasworks, and I find them of great benefit.

To give an idea of the value of the tar, I may state that I manured an acre of ground with farmyard manure of a good description and another acre with the tar, and I had five cocks of hay from the farmyard manure, and seven cocks from the tar.—C. REYNOLDS, *Parish Priest of Kildalkey, Ireland.*

[As we never knew any gas liquor so rich in ammonia as that specified by Mr. Reynolds, we wrote to him expressive of our doubts as to his accuracy on that point. He has not cleared away our doubt, but his reply contains some useful information. The following are extracts:—

"I have a vessel which holds 30 gallons, and apply it to an acre with the best results. I mean 30 gallons of the liquor as it comes from the gashouse, diluted with as much water as may seem needful. From my observations I am certain that 1 gallon in winter contains as much ammonia as 2 gallons do in summer. I never found the same observations in any book that has fallen into my hands.

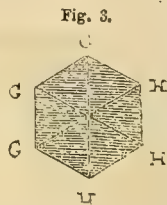
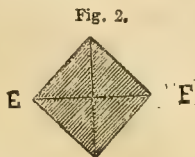
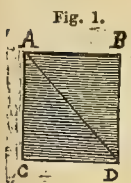
"With regard to fixing ammonia, Liebig, in his 'Agricultural Chemistry,' page 180, says, 'If we fix it, if we deprive it of its volatility, we increase its action twofold.' The method used by Liebig to fix the ammonia is to mix the liquor with gypsum; but it can be done as well by spreading it on the ground in winter, as the rain washes it into the ground. In summer the heat of the sun makes it volatile."]

GEOMETRY APPLICABLE TO GARDENING.

(Continued from page 314.)

LINES.

Side-lines are those which encompass any sort of figure, be it either a square or a polygon, as does A B C D, fig. 1.



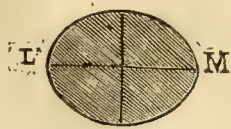
A *diagonal line* is that which passes through the very centre

of a figure, and which begins and ends at two opposite angles, as E F, fig. 2, and G H, fig. 3.

Fig. 4.



Fig. 5.



The *diameter* usually signifies a line that passes through and touches the centre of a circle or oval, as does the line I K, in fig. 4, and L M, in figs. 5 and 6. In an oval there are two, called the transverse and conjugate diameters. L M is the transverse se.

Fig. 7.

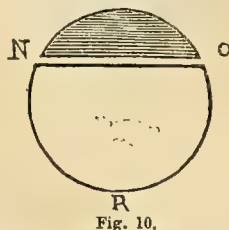


Fig. 6.



The *chord* or *subtense line* is a line that cuts off only a smaller part of a circle from a greater, or is, more plainly, like the string of a bow, which is part of a circle, as is the line N O, fig. 7, the bow of which is N O P, and the remaining part of the circle is R, fig. 10.

Fig. 8.

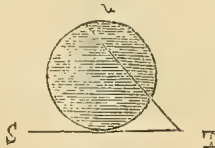
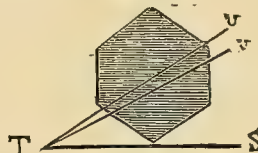


Fig. 9.



A *tangent line* is that which touches any figure (whether circular or polygonal) without dividing it, and without being able to divide it, although it were prolonged never so far, as are the lines S T, in figs. 8, 9.

A *secant line* is that which divides or crosses any circle, oval, or polygonal figure, the said oval or other figure remaining whole, and is plainly demonstrable by the lines T U, in figs. 8, 9. (To be continued.)

WHAT IS AN ORCHARD-HOUSE, AND WHAT SHOULD BE EXPECTED FROM IT?

WE have much argument on either side as to the merits and demerits of "orchard-house culture," but no one seems to have attempted anything like a judicial summing-up of the question. Let me, however feebly, attempt this. The first question is, What is orchard-house culture? From Mr. Rivers' exposition we may define it as "the growth of fruits in a cold house, and that not in, but through, pots." The house must be cold, or it is a forcing-house; and the plants must grow *through* the pots, or the question resolves itself into a contention between the advantages of culture in pots in a cold house, and culture in pots in a hothouse.

From the evidence it appears that trees planted out in a cold house, will, in their season, yield fruits, many large and good-flavoured, which if inferior to those planted out in hothouses in size and earliness, are superior to them in cheapness.

But it would seem that many amateurs have attempted the cultivation of fruit trees in pots in cold houses, and have failed; and thereupon the cultivators in forcing-houses (who are mostly professional gardeners)—first telling us that even with the aid of their expensive appliances and skilled labour, they have found culture in pots attended with 100 per cent. more trouble, and a diminution of 50 per cent. in size—proceed to draw comparisons between their planted-out trees in hothouses, and the trees in pots in cold houses. Now, such a comparison as this is inadmis-

sible. The match should be between skilled gardener and skilled gardener, between planted-out trees in a hothouse and planted-out trees in a cold one, between pot trees in the one and pot trees in the other. It should be borne in mind that the orchard-house faction numbers in its ranks but few skilled gardeners, while the other side counts many. Yet Messrs. Rivers and Pearson offer to show their planted-out trees and pot trees against like trees in a hothouse; but nowhere have they offered to show trees in pots against trees planted out.

It is to be observed, that when an orchard-house cultivator boasts of fruit grown *through* pots, his evidence is met by the reply, "You cannot call that pot-culture;" as if culture in pots were part of the orchard-house system, which it is not. There are only two questions to be answered. First, Are cold houses properly used for fruit-culture, worthy of a place in our gardens? Second, Which is the proper mode of culture in them—planting out, growing through pots, or growing in pots?

Answers to these questions may do us some good, which a wordy war as to whether skilled gardeners with planted-out trees can grow better and more fruit than amateurs with trees in pots is not likely to do.—G. H.

SMALL VINERY HEATED BY DUNG.

I PURPOSE carrying out a plan I read of many years ago, I believe in London, of erecting a small house heated by a dung-pit; but I have never seen one, and do not find any notice of it in the modern books I have had an opportunity of reading, and I am apprehensive that some practical difficulty may have developed itself, and prevented the suggestion from being usefully carried out. You can tell me in a line whether this be so. I propose to have a house 10 feet by 7 inside, with 3 feet along the front occupied by a chamber for dung 3 feet high; the dung to be filled in from the outside, and shut in closely by well-fitted doors, and the chamber formed of solid wall, but open at the top. Over this chamber some durable rails will sustain a bed of brushwood, or some such materials, upon which a bed of mould is to be placed, so that bottom heat will be applied to that bed of mould, and no other egress for the heat of the dung than into that bed will exist. The advantages I look for are—the rotting my dung out of sight, using the heat entirely, and the facility of putting in and out of sight all rotting materials, and avoiding loss from evaporation, and I suppose the dung may be put in fresh from the stable; but as to that I am not sure, nor do I quite know what depth of mould I should have. Upon that bed I should hope to raise anything wanted for transplanting, besides Cucumbers trained to the glass in front above the bed, and perhaps Melons.

This small house would be put against a south fence 6 feet high, from the top of which fence I purpose to have glass at an angle of 34°, to join the front sash. This slope will have the sun constantly from sunrise to sunset; and as I shall have 4 feet behind my dung-chamber, I suppose I may make that space a bed for a good Vine to be planted in the centre of the back, and have the benefit of the glass slope; and I suppose that such a little affair will never have too much heat to have the Vine roots inside, and thus avoid some risks I read of in your publications.—H.

[We think we know what sort of a house you mean—something of a span or a hipped-roof; but a few simple lines would have made us more sure. As the chamber for dung is to be 3 feet deep in front, we presume the front altogether will be some 5 or 6 feet in height. Now, having settled these matters, we can assure you that if you do not mind the trouble of turning the dung over in the chamber, and adding fresh often, you will be able to do many things with such a house, more especially if you do not ask it to do too much before March or so. We would not advise you, however, to have rails of wood, or brushwood to cover your pit, because in the first place you may have too much moist heat when you want dry heat, too much bottom heat when you would like some top heat, and you might have injurious steams passing through your soil and destroying the effects of all your labour, if there should be such a thing as a crack or a crevice in your soil. If such a house is to be so managed with dung, it is of importance that fresh dung, droppings, &c., from the stables should be used with safety, and for this purpose a close top to the pit either of plate iron or slate, then flagstone, &c., would be necessary. In building the front wall, therefore, at the suitable height, a ledge of bricks from 2 to

3 inches wide should be left out all the way along to receive this covering of the pit, whilst the other side of the pit will receive the other side of the covering, and the wall being carried above it as a curb to the pit, will keep the covering firm and secure. The front wall will require to be nine-inch work, and the openings for the dung may be arched or otherwise; but if economy in heating is a matter of importance, if the front wall is hollow nine-inch work, but tied together, there will be less escape of the heat of the dung to the outside atmosphere. The inner wall of the pit should be single brick on bed, with a pier in the middle, and these bricks should be laid in cement, to prevent any steam from the dung getting into the house. If two or three good-sized slates 1 inch thick were let into this inner wall, the heat would radiate from them sooner than from the bricks.

Suppose that a covering of slate over the pit is used, and firmly and securely jointed with cement, the heat from the dung will be as dry almost as if it came from a flue or a steam-pipe, and no noxious effluvia will be given off. As already hinted, heat will be given off from the inside wall, but the chief amount of heat will rise to the flooring above the pit, and when the pit is pretty well filled with dung containing a fair proportion of horse-droppings, the covering of the pit will get very hot indeed, and it is of importance that we can have that heat damp or dry, and allow it to go to the roots of plants, or keep it from them, just as we like. For example: You wish to keep some plants of a half-hardy character in winter, with, perhaps, the help of a little covering, well damp will be the great enemy. No water should be spilled in the house; the plants over the slate should be 1 foot from it, and be moved when watered, and the slate covering kept as dry as possible.

Again, you wish to strike cuttings in this pit in March. The simplest mode would be to cover the slate with some 6 inches of sand, and plunge the pots in it, easing them up if they get too hot, and keeping the sand moist or dry, as you wished a moist or a dry heat. And, once more, you propose to plant out and grow Cucumbers. Well, place from 4 to 6 inches of open rubble on the slate, covered with an inch of clean-washed pebbly gravel. Place four or five three-inch drain-tile pipes upright at the back, their bottom ends communicating with this rough boulder-chamber of rubble, and place your soil above the rubble. These pipes are to be stopped at their upper end with plugs. The rubble will prevent the roots being scorched. When bottom heat is wanted, keep the plugs in. In a dull day, when more top heat is wanted, take them out. If a sunny day comes, and there is a deficiency of bottom heat, put the plugs in, and so on. The rubble might be dispensed with, if there was a second rough flooring, such as common slate, supported on pieces of brick 2 or 3 inches above the first and secure one, with the upright pipes opening into this shallow chamber. In either case, when a moist heat was wanted, a little water poured down the drain-pipes would supply moist vapour either for roots or branches. Even for cuttings we would like this plan better than placing sand, &c., at once on the covering of the pit.

We are thus particular to please our correspondent, but such a mode of heating could not be recommended, except where the good dung cost nothing, and the labour spent in securing the heat that would have otherwise been lost in decomposition is considered to be well paid in the rotten dung thus obtained for many purposes, all the richer from having been but little exposed to air, though getting enough of this to carry on the process of decomposition.

If you used Vines at all in such a small house, we would recommend two, the Black Hamburgh, and the white Royal Muscadine. They will do well in the four-foot border, if that be well made, and if the pit were deeper than the top of the border, the roots would not at all dislike the heat.—R. F.]

A GARDENER'S LOVE LETTER.

[THE following epistle is dated from "Sunflower Terrace, Primrose Hill," and is addressed—

"To M—, who in prospect I hold
To make my new garden like Eden of old."]

MY ROSE-MARY—As you are the Pink of Perfection, and the blossom of May, I wish to tell you that my Heart's-ease has been torn-up by the roots, and the Peas of my holm entirely destroyed since I began to Pine after Yew. You will perceive that I am a gardener. My name is *William Budd*. At first I was poor, but by shooting in the spring and driving a Carnation

fast, I obtained a Celery, and by a little Cabbaging I Rose to be master, though something like a Creeper, of the whole garden.

I have now the full command of the Stocks and the Mint; I can raise Ane-mone, from a Penny Royal to a Plum, and what my expenditure leaves I put in a Box for Yew. If I May, as a Cockscomb, speak of myself, I should say that I am in the flower of manhood—that I am neither a Standard nor a Dwarf, a Mushroom, nor a May-pole. My nose is of the Turnip Radish kind, and my locks hang in clusters about my Ears. I am often in the company of Rakes, and rather fond of Vine and Shrub, which my Elders reprove me for; so I had better Berry all this, and say that I have at Windsor Bean, and have some London Pride; and as I am a branch of a good Stock with a portly bearing, I well know when and where to make my Bough.

So Lett-uce act for ourselves, and fix an early day for grafting your fate with mine, which might be made a Poplar measure, but I think it had better be Privet; for Jon-quil, the lawyer, says that your old Crab of a father, who did never a Li-lack when he wanted to part us, means to take the Elm in his own hands in this matter; but if he does, and Bullace me at all, I will not be Sloe in settling his Ash, and I will be such a Thorn in his side that the day he does it shall be one of the worst Days-he ever saw.

But I must sow no seeds of discord, for I am certain that we should make a very nice Pear, and never repent. Even when we become Sage by Thyme you would be the Balm of my life, and I should be the Balsam of yours; so that people who might call us green, now would call us Evergreen hereafter. And now Sweet Peas be with you, and if he who tries at it Tares me from Yew I shall become a Melon-Cauliflower, and wither away. My tongue will always be a Scarlet Runner in your praise; for I have planted my Hops in Yew, and now I only live for the Thyme when I may hear from your own Tu-lips that I am your Sweet William and not your—WEEPING WILL-O.

NEW YORK FLORISTS AND FLOWERS.

GREAT progress has been made both in the science and practice of plant growing and selling by the florists of New York since the days when quaint, but withal shrewd, Lawrie Todd adopted the system of painting his flower-pots to attract customers' attention, and his inaugurating a taste which now requires a great deal both of energy and capital to supply; but the plants being now of themselves sufficiently attractive, the painted pots can very well be dispensed with. Although many of the florists, thorough-going business men though they be, are not gardeners by profession as defined by Loudon in his "Encyclopædia of Gardening," still we have such men as Mr. Robert Reid, who has often officiated as a judge of plants at Chiswick in its palmiest days; Mr. Buchanan, a skilful and successful hybridiser; and Mr. Peter Henderson, of Jersey City, whose practice of growing fine saleable plants in the smallest possible pots I have never seen excelled; and all these are professional gardeners who would do honour to horticulture in any country. Glenny's "Properties of Plants and Flowers" is a work almost ignored here, the property most in request being abundance of bloom, a large and fast-increasing business being done with cut flowers; and this winter the supply has never been equal to the demand.

Bouquets are arranged most artistically, and with great diversity of taste; indeed I have never seen them excelled even in Covent Garden. Rustic hanging-baskets and stands for parlour or drawing-room are now in great request, Ferns, Lycopods, creepers in variety, and many adaptable variegated and fine-foliaged plants being used with great advantage.

The Camellia is deservedly a general favourite, and is both extensively and well grown, the retentive yellow loam which abounds here being well adapted to its culture; but I have not yet seen anything to be compared to the handsome plant of reticulata that Mr. Blair (now of Shrubland Park) had at Bank Grove with its 2000 expanded blooms. The flowers are not cut, but very adroitly twisted off without any damage to the plants, then neatly "fixed up" for either bouquets or baskets.

Roses are to be found in every collection, and fully maintain their position as the queen of flowers; for though not blest here with a Queen Victoria, still we have our Queens of Beauty and of Flowers, and well represented too.

Violets are grown by the thousand, and do remarkably well. The strongest runners are selected and planted out in May, by September these make fine strong plants; they are then lifted,

and planted in cold frames prepared for their reception, and by careful attention to protection and ventilation supply an abundance of dark blue highly-scented flowers from November to April, each flower as large as a penny-piece. As an instance of their fertility, one florist picked 18,000 for last New Year's-day: these would sell readily at from 75 cents to 1 dollar per 100. On the 3rd of April I picked 3700 from twelve hand-lights, and could easily have picked 4000.

Stevia and Eupatorium are indispensable for white flowers, and are real boons to the florists. The quantity of flowers on the Bignonia venusta, trained to the rafters of a greenhouse and judiciously managed, almost exceeds belief. Tuberose flower very freely, and are most desirable fall flowers. Gladioli have been found to be admirably suited to this climate, and several of the florists have now very extensive collections.

Many of the popular names for plants are rather perplexing. Soon after coming here I was asked for my "Lady Washingtons," and had to confess my ignorance of what class of plants were known under that most honourable name. From this dilemma I was quickly relieved on coming to Pelargoniums; but finding on further investigation that Pansies were popularly known as "Johnny Jumpers," I had to commence and revise my stock of synonymes.—DAVID FOULIS, *Astoria, Long Island, New York.*

VINE-BORDER COVERED WITH FERMENTING DUNG.

My Vine-border is covered with about 2 feet in depth of hot dung, and wood shutters are placed on the top. I have been advised to remove it entirely, and place nothing on except a little litter and the wood shutters. My Muscats the last two years have shanked very much. This year I have noticed a small black speck on the side of the berry, which gradually increases till the berry is decayed. I have no border inside, and that outside is 2 feet deep, and well made. I examined the roots in the winter, and they were in a strong healthy condition. —A YOUNG BEGINNER.

[You may injure the roots if the manure was too hot. If not too hot now we would allow it to remain until the middle of June, as in this weather the border will lose more heat than it will gain from the sun. Then it would be advisable to cover with litter in cold weather—say at night, and remove the litter in sunshine and fine weather until July. We cannot see the philosophy of putting litter on now and the boards above it, as the latter would intercept the sun's rays. Give plenty of air inside.]

OLD VINES VIGOROUS BUT UNFRUITFUL.

[The following refers to our notes on the subject at page 340.]

"I will give you the particulars as nearly as I can remember. In the month of February I began fires, and made a hotbed at the same time with manure, just as it was brought from the stables. The bed consequently was very hot, and the heat very rank. If I remember right, the bed was too close to the Vines; at all events the Vines did not break, and they seemed quite dead. I cut them down to the bottom; they then broke and made capital wood, which seemed quite ripe to the top.

"The leaves I sent last week only belonged to the weak Vine, since then a weak one close to the other has something of the same coming. As soon as I received your paper, I cut the first piece away, and only discovered the one alluded to this morning. I have not given fire heat, and when the sun is out I give air.—H. H. C."

[Our surmises we find have been pretty correct. We would not have given fire heat along with the rank manure. We would have allowed that to act upon the Vines alone for the first fortnight or three weeks, and by that time the heap would be getting sweet. The rank manure would not injure Vines in a state of rest; but if there was so much of it as would raise the house from 45° to 50° without sun, then we would give a little air, and even in the daytime we would not with sun heat let the thermometer rise above 60° or 65° for the first month. We have used manure direct from the stables as it could be got, so rank that we do not think the mere rankness would do the mischief; but excessive heat to unstartened Vines, or placing that steaming heat nearer than 3 feet from their stems might do the mischief. The great thing is to have all the manure sweet enough for Cu-

cumbers before the Vines break. If the Vines had been forced before, it would be advisable in February to have used manure once turned before taking it to the house. We were afraid you had the mildew on the weak Vine, and now we feel pretty certain of it. The treatment you are giving is the very best to cause it to spread over the house. Wherever there is the faintest trace of it, dust the part, stems or leaves, with flowers of sulphur, and wash the walls of the house with sulphur and lime. We would also say, daub a little sulphur on the heating medium, but we do not know what it is, and the part so daubed should not be more than 160°; and, therefore, you might easily have it too hot. The means for eradicating the mildew and securing a crop next season will thenceforward be identical—and that is, not refraining from fire heat, and giving air only when the sun shines; but giving fire heat so as to prevent the atmosphere falling much below 60° without sun, and to permit of air being given every day, and if a little at night too all the better. The fact is, that having started the Vines into growth, then allowing them just to take their chance is the best plan for getting no crop next season.—R. F.]

CLARKE'S PATENT SCYTHE.

THIS simple, handsome, and convenient scythe was sent to us for our opinion, which we now express; but to have it thoroughly tested we sent it to Mr. Cuthbert W. Johnson, and this is his evidence upon the implement:—

"Waldronhyrst, Croydon, May 19, 1863.

"I have much pleasure in bearing testimony to the great excellence of Clarke's Patent Scythe. My gardener is of opinion that no one who has tried Clarke's Scythe will be willing to go back to the old kinds.—CUTHBERT W. JOHNSON."

WORK FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE should be taken of the present showery weather to transplant and earth-up all crops that require it, for if done when the soil about them is dry, they will not receive that benefit from rain which they otherwise would do. In pricking-out, or transplanting, particular care to be taken to press the soil close to the roots of the plants, for if left hollow and loose about them, drought will soon stop their growth, or, probably, cause them to perish. Wherever it is convenient to plant with a trowel, it is far preferable to planting with a dibber, as with the latter the roots are either left hollow, or are crushed up together and rendered nearly abortive. This is sometimes the reason why plants of the same sowing vary so much in their growth; in one case the plants are pulled up and deprived of half their roots and carelessly planted, in the other they are dug up with care, and are then transplanted and watered, and progress favourably. *Asparagus*, keep the surface of the beds free from weeds. Where the supply from the established beds is abundant, the weakest heads may now be allowed to grow, they are not so likely to keep strong buds latent, as if strong ones are allowed to run up to maturity. *Broccoli*, prick-out into nursery-beds any that are sufficiently advanced in growth. Sow a full crop of Cape and Grange's Early White. *Cabbage*, where they were planted in the autumn at a foot apart in the rows, every alternate plant should be pulled up as required for use, this will give those remaining space to attain perfection. *Cardoons*, sow a late full crop. Plant out the early crops; if they were sown in a seed-bed choose a rich piece of ground for the purpose. It will not be necessary to plant largely of the first crop, as it soon runs to seed. *Celery*, plant some of the most forward into trenches, keep it well watered in dry weather. Continue to prick out from the seed-beds for late crops. *Endive*, make a small sowing. The sowing for the main crop to be made about the middle of next month. *Dwarf Kidney Beans*, earth-up those that have been planted out, and sow again. *Lettuce*, make a sowing of two or three sorts, by such means the season of one sowing is prolonged. The Paris Cos is a very good summer sort. *Potatoes*, as soon as they appear above ground to be hoed between to loosen the earth, and to destroy weeds. *Turnips*, make a good sowing for early autumn use. Thin-out the advancing crops. *Vegetable Marrows*, plant-out this very useful vegetable on a rich piece of ground, where there is plenty of room for the plants to grow. *Sea-kale*, thin-out the buds so as not to allow them to crowd each other, and water once or twice during the summer with a weak solution of salt and water, which will

benefit the plants and dislodge snails and other vermin. Two ounces of salt to a gallon of water will be sufficient. *Trench-up* every spare part of the garden for the first plantations of winter stuff. Let it be trenched 2 feet deep in the first instance, after which give a coat of manure, and dig it in; when the plants are fit the ground will be ready for planting with Broccoli, Brussels Sprouts, Kale, &c. The former to be planted 2 feet apart each way, if fine heads are desired; the other two sorts will do well with a few inches less space. After they are planted to be protected from slugs by placing a ring of hot lime around each plant.

FLOWER GARDEN.

All annuals should be thinned-out as soon as they are above ground, for if left to grow too thickly they spoil one another, and never make half the display plants do that are allowed plenty of space, and which are grown strongly from the first. After the bedding-out is accomplished, a reserved stock should be taken in hand to receive high cultivation, in order to fill up blanks the moment they occur, either in the houses or in the beds and borders. All the best Verbenas, Fuchsias, Calceolarias (especially shrubby kinds), Petunias, &c., will be found most useful things. Attend to the staking of Pinks and Carnations as they grow, this will greatly enhance their appearance when in bloom.

FRUIT GARDEN.

Watch the first attacks of caterpillars on Gooseberry and Currant bushes, and apply dreggings of white hellebore powder when the bushes are wet with morning dew. One application will prove sufficient, if every part of the bush is properly dusted. When black fly has attacked Cherry and other wall trees, give them thorough good waterings with the engine. Use pure water for the first time, which will partially destroy the fly, then apply by the same means a good washing of soapsuds and clear soot water. If prosecuted thus, by repeated applications they will all disappear.

GREENHOUSE AND CONSERVATORY.

The young stock of hardwooded plants should be growing freely, and will now require careful attention to supply them with a warm and moist atmosphere, and with sufficient air at favourable opportunities to secure short-jointed, and compact growth. Balsams to be frequently shifted into large-sized pots placed in a gentle bottom heat near the glass, with sufficient air to prevent them from being drawn. The *Epacris* that have done blooming and are now commencing their growth to be potted, they delight in sandy heath soil. The Chinese *Azaleas* going out of bloom should have their seed-pods picked off, and such as require more pot-room to be shifted, using rich fibry peat, with a good sprinkling of silver sand. *Cinerarias* to receive plenty of air to keep the plants in a healthy state without drawing the foliage. The green fly to be kept down by tobacco smoke. When stock of a good variety is required, the sooner the plants are headed-down after blooming to within an inch of the pot the better; they will soon make side shoots, which should be carefully divided with a portion of root to each, and planted singly in a small pot, to be placed in a cold frame, and shaded from bright sunshine. The *Chrysanthemum* cuttings now in small pots to be transplanted to the open ground 15 inches row from row, and plant from plant, to be taken up in a showery day in autumn, potted, and watered, when they will not feel their moving. Cuttings of *Rollisson's Unique Pelargonium* that is generally so difficult to strike after mid-summer, will now strike freely in sandy soil in a gentle bottom heat. It is well worthy of attention, producing very large clusters of rich violet or crimson-purple blossoms. It is valuable for grouping, for vases, or for training against a wall. It requires to be freely cut back in the winter and spring to encourage lateral growth, and being luxuriant in growth and sparse of branches, it requires to be pegged to the ground when planted in beds. It will be well to bear in mind during the summer, that the shape and sturdiness of every plant will depend, in a great measure, upon frequent attention to pinching-out the points of every strong-growing shoot before it gets too long. Also, a liberal supply of good, clear liquid manure to be given occasionally—that is, once or twice a-week, according to the state of the weather, and the healthy or luxuriant growth of the plants, from which it is to be inferred that plants in a sickly state, or such as have been lately potted, will not require it. Indeed, to such it would be a positive injury. To commence with the liquid manure weak, and to increase its strength with the strength of the plants, and the increasing temperature of the summer sun.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

SLIGHTLY earthed-up Potatoes, but the forwardest out of doors will, we fear, be the second, as they were much injured by the frost of the 2nd inst. Earthed-up Cauliflowers, drawing the earth to their sides, and leaving a hollow in the centre of the ridge for future waterings if needed. Watered those in bearing that were under hand-lights. We generally place them in two or three rows, some 4 feet apart, and then when the plants are large a trench is dug out to bank them up, which then comes in for Celery. Pricked-out seedlings of Greens as time could be got and a spare piece of ground for the purpose. Broccoli has done very well this season, and even now is contending with the first Cauliflowers. Peas seem to be coming late out of doors, though when a person can have a good row in an orchard-house it makes one feel more independent. Broad or Garden Beans have done less good. They will not set well if the house is much shut up. Even for such purposes, and Strawberries a week or a fortnight earlier than out of doors, these houses are invaluable, to say nothing of salads, &c., in winter. Run the hoe among all growing crops, and especially young Onions, Carrots, Parsnips, &c., and will defer thinning much until we get a good rain; for, though thankful for what we have had, the drizzlings, though putting a little water in our tanks, have done little more than lay the dust, the ground that had previously been mowed—such as flower-beds—being still very dry, and requiring, therefore, more water when planting.

FRUIT GARDEN.

Went over Peach and Apricot trees, but not time to do more than a little to them. Syringed with soot and lime water to keep fly and caterpillar at bay. Gave extra syringing to Cherry trees and watered at the root besides, and did the same to Plums. Will thin and nip the shoots of Pears as soon as we can get at them. Went over trees in orchard-house, tied and stopped shoots in Peach-house, and slightly smoked again, as we noticed some signs of our old enemy, the brown beetle. Regulated Strawberries in the houses for the last time, and noticed a berry here and there that seemed to get hard, refuse to swell, and at last rot away, which I attributed at first to extra moisture, but which my manager thinks is caused by syringing with the sulphur water which I have several times described, and which, though of a milky appearance, leaves no mark behind it, and seems to injure nothing else. It is worth noting, however, so as to keep it from the fruit of Strawberries. Of course, they might be freely syringed before they were in bloom. Thinned Grapes, regulated and tied-in shoots of Vines. The forwardest ones have still the covering of about a foot of leaves, which keeps the border about 68°—at least at the surface. The late house, which has come earlier than I wanted, has the border fully exposed—only the surface is still cased with the thin film of tar and sawdust. We will not remove it just yet, as the soil is wet enough beneath, and the casing will throw past these cold rains. In fact, if these cold nights continue, as the Vines are so forward inside, showing the bunches, we will throw a little long litter over the border and rake it off when the sun shines, and put it on again at night; but if the weather is mild we will save ourselves the trouble. We will let the leaves on the other part alone for some weeks yet; in fact, until we are sure that the sun will throw in more heat during the day than the border will lose by radiation at night. There would be about 18 inches of leaves covered with litter at first, and that, of course, got closer together. To take advantage of the little heat given off, frames were set on the top of the leaves, and lots of things forwarded. A small part next the house has been uncovered, and a little warm water given where it was at all dry. When we move these leaves off and the film of tar, we will, most likely, cover with litter at night for a week or two. Stopped shoots and thinned shoots of Figs, and watered well, as it is advisable not to give too much water when the fruit is ripening, and the crop is a very heavy one. Potted Vines, &c.

ORNAMENTAL DEPARTMENT.

Removed faded plants and took fresh to conservatory. Will clear Azaleas of their faded flowers as soon as possible, and then place them together that they may be kept closer and be well syringed. A house, or pit, where they could get a temperature of 50° at night for a fortnight, and then a rise gradually to 60°, would cause them to make their wood quicker, and set their buds sooner. Under the shade of Vines in a rather late house would just be the place for them, if certain that there was not such a

thing as a single thrips on the plants; for, if there be, there may be no end of trouble with such insects on the Vines, as they will prefer the Vine to the Azalea. It is advisable to give them a little rest after flowering, before exciting them with extra heat. It enables the plant to recruit its energies as it were. The plants will do very well in a conservatory or a greenhouse, treated as mentioned above; but the flower-buds will not set at the points of the shoots so early, because the shoots will not be so soon formed; and the same rule will apply to all such plants as Camellias, Epacris, and, to a certain extent, to free-growing Heaths, though the latter must be hardened-off by more air at an early period.

Epacris, when done flowering, cut back, and that may be done pretty freely if the cutting is confined to the wood of last season; but older wood should rarely be cut into, as many good plants have thus been irremediably injured. These, also, when cut back, should be kept close and cool, with but little water for a fortnight or three weeks, and they, too, will succeed if kept in the warmest end of the greenhouse; but they will do better if placed in a closeish temperature of from 55° to 60°, and continued in it until the shoots are growing freely; and then the plants should be moved to a cold pit, where they can have more air admitted by degrees, and then be hardened-off by full exposure in autumn, except during drenching showers. Potted plants for houses, and also for flower garden, as they are too small for turning out—in fact, most of our strength has been directed to the flower garden, looking over herbaceous plants, pricking-out Wallflowers, and turning and preparing beds for bedding plants; and in this turning and burying sunbeams consists no small part of the success in such cold stiff soil as we have to deal with.

We feel there is something so peculiarly egotistical in speaking of arrangements, that we should not have adverted to them had not several readers and correspondents told me that the arranging of the beds, and the distance of the plants from each other, would be more interesting to many than telling about brown beetles and the planting of Cauliflowers. Now, as already stated, for various reasons, but chiefly to save time in planting and keeping right afterwards, we have resolved to adopt the most simple modes of arrangement this season. We will then just state, to please our friends, the planting of two groups of beds, close to the east side of the mansion. These beds are extremely simple and unique in their way. One group of fifteen beds is on the south side of a corridor and wide piece of pavement, and in front of the drawing-room windows; the other group of fifteen is on the north side of the corridor, and in front of the dining-room windows. We will then take one side—say the south, for both sides are alike, and planted alike. The fifteen beds are squares of 4½ feet on the side, and arranged in three lines of five beds in each line. These beds are separated from the mansion by 30 inches of pavement; from the broad gravel walk in front by a similar width, and then the beds are separated from each other by stone pannels of 14 inches in width. Every year these beds have been arranged differently.



This season they have been planted in squares—that is, a square of 18 inches has been planted in the centre of each, and that planted different from the 18 inches all round, and so that the form may be maintained with little trouble; and also that there should be little difference in the height of the beds, the tallest, if anything, next the mansion. The following figures will represent the fifteen beds in three rows, beginning next the house, and marked just as the man had them to plant by.

14	8	2	6	12
10	5	1	4	11
15	9	3	7	13

The figures are arranged in this seemingly-without-system mode, in order that the planter may see at once he is working from a centre, and that the beds shall pair with each other. The centres, 18 inches square, are generally filled with nine plants; the other 18 inches round, leaving a regular space next the pannel required according to the plants and their size, from one and a half to two dozen more—say from thirty to forty plants in a bed. The inner square of 18 inches will be the first mentioned.

1, Madame Vaucher Geranium, white, mixed with Snowflake

Verbena, in case the flowers of the Geranium should not be thick enough, bordered with Purple King Verbena.

2, Stella (Beaton's), and Golden Chain Geranium.

3, Newlii, and Cloth of Gold Geranium.

4 and 5, Scarlet Globe, and Bijou Geranium.

6 and 8, Calceolaria, stiff plants of Aurantia multiflora, and purple Heliotrope, the latter chiefly for the scent near the windows as well as the colour.

7 and 9, Calceolaria Aurea floribunda, with blue Anagallis next, and then a band of Lobelia speciosa.

10 and 11, Christine Pink Geranium, and Tropæolum elegans.

12 and 14, Boule de Feu Geranium, fringed with white Verbena, and that with Christine, a rich puce.

13, 15, Brilliant Geranium, skirted with Variegated Alyssum, and that bordered with Charwoodii Verbena—a stiff upright grower, with small purple flowers, and though one of the oldest one of the best for effectiveness, the habit being so good, and the foliage so small. The other side with the fifteen beds is planted the same, so that each group is balanced from the centre square 1, and then each group as a whole is a counterpart of the other, from which it is separated by the broad piece of pavement. Beyond the walk in front is a grass terrace, bounded by the border to which we referred last week. As we want effect soon, these squares were planted thick, and some of the Verbenas were not very large. The Geraniums were nice stiff plants showing flower; but nine plants did not do more than fill the outside lines of the eighteen-inch middle square.

But for time we would have described the planting of some ribbon-borders; but perhaps it would be as well to reiterate two or three particulars in our planting. First, most of our plants being raised from temporary beds, there is no trouble in loosening the balls, which is a necessary operation if the plants are turned out of pots which they had filled with their roots. Lifted as ours are, the rootlets are quite ready to run away into the soil of the bed. Of course the plants feel the moving the first week or so. Secondly, we have never been able to dung our beds or give them leaf mould as we would wish, or even do much as respects changing the soil; but we make amends for this by changing the crop generally every year. The beds being poor, and the soil generally rather rough, we make it a point to give every plant a handful of rich light soil to start in, and anything particular gets two or three handfuls. When we can do so with small things we place some of the prepared compost on the bed, and draw it in round the plant with the trowel or the hand as planting is going on. We seldom can afford to be so extravagant, so generally as the planter makes the hole and sets the plant in it, a little boy pitches down to him the little soil as he goes on. This compost is formed of two parts of road-drift and road-scrappings, chiefly for the ground flint they contain, though we get weeds with it. This is turned several times during winter and spring, and then sifted through an inch sieve. To this is added one part of sifted leaf mould, ditto sifted old Mushroom dung—and this is why we required to clear the Mushroom-beds out—and one part of burnt earth, clay, and charred materials, generally pretty hot, which thus makes the compost when well turned very comfortable as respects temperature. If the burnt clay, &c., do not settle the worms that may be in the leaf mould, &c., a little lime is added. This mixture is thus both light and rich, and the roots go into it at once; and thirdly, almost every plant except those pegged-down is staked and tied as soon as planted, the stakes preferred for all bedding plants being the twiggy branches of the Spruce Fir that have lain the best part of a twelvemonth. The more twigs there are on them the better. If the branches have been used as the bottom of stacks all the winter they will be nice and straight from the weight above them. These hurdles burn so beautifully that we have had to threaten the lad that attends to the mess-room fire; for when he wanted the kettle to boil he forgot about our bedding plants. We have these made into bundles from 1 foot to 2½ or 3 feet in length, according to the size of the plants to which they are applied. We have had the same twiggy sticks for a number of years; but for nice purposes they are not so effective as new ones, as the small twigs get rotten and broken off. This staking adds greatly to the labour; but in such an exposed place as this we should have things swept off without them. On last Tuesday we had some things broken and cleared off, but mostly when untied. For a month or so the sticks are rather prominent, but then the object is seen, and that gives them at least the commendation of fitness, and the beds also, if well twigged, have a certain amount of shelter. When the beds come to be at their

best the sticks are all concealed, and the shoots are so interlaced among the twigs that it would require next to a hurricane to displace them or roll them into bundles.—R. F.

TRADE CATALOGUES RECEIVED.

Catalogue of Choice Plants, Azaleas, Geraniums, Dahlias, Roses, &c.—Dillistone & Co., Sturmer, Essex; and William Dillistone, Munro Nursery, Sible Hedingham, Essex.

Alex. Gibb, Panmure Nursery, Broughty Ferry, N.B.—*Catalogue of Florists' Flowers, &c.*

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the "Journal of Horticulture, &c.,"* 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

POLYANTHUS WITH LEAFY CALYX.—A reader of THE JOURNAL OF HORTICULTURE would be very glad to communicate with "C. Daniel" respecting the Polyanthus sport with a leafy calyx, mentioned at page 330.

PLANT CASE (A Three-and-a-half-years Subscriber).—We grow tender Ferns, Maranta tigrina, variegated-leaved Begonias, and dwarf Caladiums similarly variegated. We use the Bijou Plant Case, manufactured by Mr. Stocks, 14, Archer Street, Kensington Park, W.

FERNS FOR A GLASS CASE (J. M., Dumfries).—For a room scarcely ever having a fire in it we do not think that your selection for the case is suitable. Adiantum curvatum is a native of Brazil, and requires a cool stove or a warm greenhouse. Asplenium adiantum nigrum is very suitable, being a British species delighting in a shady place and growing in vegetable mould, brick rubbish, and pebbles. It is almost an evergreen, if not quite so. Lastrea bulbifera, or Aspidium bulbiferum, is a North American species, and suitable for the case. Adiantum capillus-Veneris is also suitable, being the Bush Maidenhair. Adiantum gracile, do not know; but fear it will be too tender. Adiantum formosum we think might answer, though it would be better of more heat. In such a cool case the fronds would get brown and withered in winter, but come fresh in spring and summer. Acrophorus hispidus, do not know it, and therefore cannot say if suitable; and fear we must say the same of Davallia longifolia, as all the Davallias we know are natives of warm climates. Instead of these tender ones, we would recommend such British Ferns as Allosorus crispus, or Parsley Fern, which should be planted shallow, and be kept well drained and moist. The fronds will always come green in spring; and such Aspleniums as fontanum, lanceolatum, viride, and marinum, all require peat, heath soil, broken bricks, and a little lime rubbish; and the latter the least of salt in the water. Cystopteris alpina and Trichomanes radicans, or Killarney Fern, require also to be shallow-planted in peat and moss, and kept in a cool, damp, close atmosphere. We think that with these you will succeed better and be better satisfied than with tropical exotics. Instead of planting in leaf mould and water sand, drain well, use a little old sweet leaf mould, but chiefly heath soil, and mix all with broken pieces of pots and bricks; and for sorts that cling to walls use pieces of stone. We would not leave the bell-glass off long at a time, but would merely elevate it a little; in fact, we would prefer a moveable top, so as to give a little air at pleasure. We would also daub the glass next the window and the top of the case to keep too bright sun out. The glass inside being dewed with water is all right enough. If you had a moveable top, and turned it the reverse way in the morning, the tenderest Ferns would not be injured by dripping.

VERBENA TO CONTRAST WITH PURPLE KING (M. M. P.).—We should select Evening Star; but Miss Mildmay or Loveliness would suit you among the older kinds. We do not know the best mauve-coloured that would thus contrast. Lord Leigh is a noble crimson scarlet with yellow eye, sent out by Messrs. Perkins, of Coventry, figured in the *Florist and Pomologist* of March, along with a beautiful purple, Lord Craven, now sent out by Downie & Laird.

FUCHSIA SHOOTS INJURED (Three-years Subscriber).—There are signs of thrips having been on the fuchsias. It would be safest to take them away from the rest and smoke them. There are also signs of the soil having got sour with stagnant moisture about the roots. If none of these are the causes, we are at a loss as to the reason.

MELON LEAVES DISEASED (Cucumis melo).—We think it is likely that there is too much bottom heat for these hardier kinds of Melons, which might be neutralised by a good layer of rubble between the pines and the sun. We can see nothing wrong in the treatment, more especially as other varieties answer so well; but, if not tried, we should adopt leaving a little air on all night, or, at least, giving air the first thing in the morning, however small the quantity, so that all moisture shall be dissipated from the leaves before the sun strikes them. Some of the Persian kinds will thrive in an amount of atmospheric moisture that would ruin some of the older and hardier kinds. We shall be glad to hear how you get on with them.

GOLDEN CHAIN AND OTHER GERANIUMS (Q. Q.).—You had better send leaves of the plants in dispute. Very likely one of your plants is golden-edged. We have just pulled off a leaf of Golden Chain at random. It is about 3 inches in diameter, but will be much larger in summer, yellow all round, some places a quarter of an inch, in others more than 1 inch deep, running into and mottling the green. The flowers are small nosegay blossoms of a bright cerise colour. For practical purposes we consider this and Cloth of Gold the best, and Golden Chain is so well known that some in your neighbourhood must be acquainted with it. If leaves are sent and numbered we would have no difficulty, we think, in deciding upon it; but we could not do the same with the many other Golden Chain mentions, many of which we have not seen. Cloth of Gold has fine scarlet flowers, as good or better than Tom Thumb; and the leaves, greenish-yellow in winter, become brighter yellow in summer. Sunset took our attention much, but we have not got it, and somehow we have seen it nowhere out of doors. We are just in the same fix as to white variegated Geraniums. Mrs. Lennox, Countess of Warwick, and many others are good. We prefer Bijou and Alma and the old Flower of the Day to any we have met with; but that is no reason why others should not have their Queens, Silver Queens, and even like them better than we do Bijou.

LIGHT BLUE LOBELIA (Idem).—The best blue Lobelia with a white eye we should presume to be Paxtoniana or Gordoniana. A strong-growing light blue to hang about would be the common gracilis, or, stronger still, begoniaefolia. Erinus is light and compact in growth. You may top your Zelindas for the purpose wanted; but for our part we have had them in dense bloom from July to November without stopping, by pruning-off the flowers as they begin to fade. To have bloom in mass in September and October you may stop and top now to your heart's content.

FLOWER-GARDEN PLAN—WARDIAN CASE (Mrs. C.).—We are sorry to say that neither the Lilac Candytuft nor the Nemophila will be likely to stand the season. We think it is quite likely the Saponaria will yet come up. If not, the best substitute would be a pink Verbena, as Favourite, Loveliness, &c., for No. 2; and if you wish No. 1 to be white, white Verbena Snowflake or variegated Alyssum for planting, or white Candytuft or white Alyssum for sowing. Much the same remark applies to No. 4, Purple Candytuft, which, if it blooms early, will not continue. You would notice in the plans of flower gardens the importance of having a centre. Yours can hardly be said to have one, but you write so clearly that we are tempted to say what we think would improve your arrangement. Let 5 and 6 be Calceolarias, yellow and edged with a small purple Verbena, as Charwoodii or Purple King. Then 1 and 4 we would make purple; and 2, 3 pink edged with blue; 7, 8, scarlet and white as now, and the rest ditto. You will succeed with Portulacas and the other things you name, simply by keeping the bottom of the case drier and giving more air—a little, at least, every night—and turn the glass cover in the morning to prevent drip. It will be best, therefore, to strike those that like a moist atmosphere at one time, and those that do not like so much at another time, or put a division in your case.

INSECTS (J. Gaitley).—The specimens enclosed by you are of the Snake Millipede, *Julus terrestris*. They have been charged with eating the roots of Pansies, and you state that they have "destroyed several rows of Peas." Try watering on each side of the rows with diluted ammoniacal liquor from the gasworks. This repeated once or twice a week may drive them away, and invigorate the Peas at the same time. We cannot say how much water you should put to a gallon of the liquor, for this varies in strength, but, probably, one of liquor to three gallons of water would do.

PEACHES AND NECTARINES FALLING (E. M., Ipswich).—As both the trees in pots and those in the borders shed their fruit, we think they are all too dry at the roots. We recommend you to water them with weak liquid manure of a temperature of about 80°. Give a good soaking that will penetrate down to the lowest roots.

RUSTIC VASES.—I purchased some of these pretty vases, but find that they look very white as if mildew had affected them. What is the composition wherewith they are coloured, and how is it to be applied? Perhaps some tradesman who sells them will be good enough to answer this.—D.

SEAWEED FOR ASPARAGUS-BEDS.—In answer to "W. M.'s" inquiry in your Journal of May 5, *F. W. B.* begs to state that he covered his Sea-kale bed in November, and began cutting the Kale early in February. *F. W. B.* has no doubt that an earlier crop might be obtained by applying the seaweed in September or October; but it is important that the fresh seaweed should be covered with earth to prevent its being dried up and losing all nutritive matter.—W. S. M.

ANTS IN PANTRY (Wiltshire Rector).—Powdered carbonate of ammonia sprinkled about their haunts, and persevered in for a few days, will probably drive them away.

VERBENA VENOSA (S. E. B.).—Any florist can obtain it for you. We know that it was in Messrs. E. G. Henderson's catalogue.

VARIOUS (S. J. W.).—The leaves of your greenhouse Rose are attacked by a parasitic fungus. Dusting with sulphur, more air, and more light would probably overcome the fungus. For the culture of Roses in pots consult "Florists' Flowers for the Many." You can have it free by post from our office if you send six postage stamps, with your direction. *Campanula pyramidalis* is a perennial. We have never heard before that cocoa-nut fibre refuse destroys plants by inducing fungi, and we believe such a statement is not founded on facts.

PROPAGATING THE HOLLYHOCK (A Subscriber).—This is easily done at the present time, by taking a few shoots about a yard long or so, and cutting them into lengths of two joints each, removing the leaves from the lower joint and inserting the cuttings in sandy soil under a hand-glass. Almost every cutting will grow. Any time in the early part of June will do. Later on in the year this propagating requires the assistance of a hot-bed, and is then more uncertain.

PEAR TREE NOT BEARING (Idem).—Pear trees cannot always be made to bear all over the tree as a Vine can be made to do. If your tree bears as many near the extremities as you think the whole tree ought to produce, you must not complain. A partial remedy, however, may be had by introducing some young shoots from the centre of the tree and training them between the older branches and removing the latter when the younger ones are far enough advanced; but the tendency to bear most on wood that is two or three years old, will always show itself in spite of all that can be done. Allowing the spurs to extend a long way from the wall will sometimes induce fruit in the centre; but the ugly appearance of the tree hardly justifies the plan.

PLANT DESCRIBED (A Subscriber, Kilmarnock).—Your "prickly Pear" we think must have been the *Datura Stramonium*, or Thorn Apple. It is a native of this country.

FLOWER-GARDEN PLANTING (An Irishwoman).—We think your proposed arrangements will look very well, and we presume your Shrubland Pet is all right. We have had, however, some trouble in finding the connections in your letter, and were you not a lady we would advise the beginning your tale at the first page of a sheet and going regularly onwards. We have had to twist and turn to find out what you meant or what you wanted, and we are sure you did it quite unthinkingly; but all correspondents asking such questions should endeavour to give as little trouble as possible.

TREATMENT OF QUICKSET HEDGES THE FIRST YEAR AFTER PLANTING (E. R. S.).—Unless the hedge be planted early in the autumn, it is best not to cut the plants down until the following season, when a much better result will follow. In the district where the best hedges are reared this is the practice, and it cannot well be improved.

PLANTS FOR STUMPS OF TREES ON A SUNNY SITUATION (Idem).—There is nothing better than some of the Tropaeolums, as Elegans, Edipse, &c. Ivy-leaved Geraniums are also good, and the Gold and Silver-edged Ivy itself looks very well and does well. Some of the hanging species of *Mesembryanthemum* also look well, as likewise does the variegated *Periwinkle*, and even *Scarlet* and other Geraniums do pretty well. On the other hand, *Calceolarias*, *Lobelias*, *Verbenas*, and such plants as like a richer soil and more of it, do not so well, as we expect the quantity of mould is too limited.

GERANIUM LEAVES SPOTTED (A New Amateur Subscriber).—The spot you complain of is mildew, caused, we think, by the plants receiving too much water, or, perhaps, being too much in the shade and not warm enough. After potting-off, bedding Geraniums of the *Scarlet* class require very little water until they begin to grow. We have never known the evil so late as you seem to have it, but it is common enough in the dark days, but disappears when more sun and drier weather set in.

PLUMBAGO CAPENSIS NOT FLOWERING (Idem).—If your plant was too much in the shade during the early part of the summer, it would not have time to prepare its flower-buds before the season was too far advanced for its blooming. Potting the plant after May is also more likely to produce wood than flowers. It also requires a house a little warmer than an ordinary greenhouse to induce it to flower well, although after it has flowered any cool house will do for it. It does better against a wall than against a trellis in a pot; but in the latter we have seen it do very well, and we have no doubt but you will succeed if the season be a warm one, and you are able to give it a little heat to begin the summer with.

FIGS IN A HOUSE DROPPING OFF (A. W. B.).—Most likely your Fig tree lacks water. At this particular time the Figs seem to revel in moisture, and the tree being in a house the usual moisture it would have received out of doors is denied it. Try watering well and stopping some of the shoots and most likely you will get the second crop to ripen, and more especially if you thin them freely if they show too abundantly.

ORANGE TREE NOT THRIVING (Idem).—If your tree was in bad health last year, it would have been better to have repotted it entirely, and ascertained if the drainage, &c., was perfect, as we suspect it is suffering that way, for although the Orange likes abundance of moisture, it does not like it stagnant. The warmth of a conservatory that is at present increased to encourage the growth of the Camellias, will not be too much for the Orange tree. On the contrary, it ought to suit it exactly. Better examine the roots, and if they be decayed and bad cut them in and repot in a rather more open soil with plenty of drainage and in a smaller pot, cutting back the top at the same time, and shade and syringe until the summer's growth is finished, when it may be gradually hardened and turned out of doors for a plenty, taking care that it does not suffer from too much rain and yet has plenty.

CATALPA NOT FLOWERING (H. P. B.).—Although we are told this tree flourishes in the swampy districts where the war is now raging in South Carolina, we are far from certain that a damp situation suits it in England. On the contrary, the places where it seems to flourish most are on dry stony or gravelly soils, where it flowers abundantly, and in the hot seasons of 1858 and 1859 it formed seed-pods. As your tree is so old, it would be better to procure a young one from a nursery to plant in some dry place, and in due time you will be favoured with flowers. It seems to require all the warmth of our hottest summers, and consequently in unfavourable situations or adverse seasons it does not succeed so well. We had but few flowers in 1860 and 1861, but before these times, and also last year, we have never failed in having abundance of flowers on trees planted on dry stony soils.

MOVING AN ARAUCARIA (Idem).—We are far from certain which is the best time to transplant this tree, as we once removed two in April, much alike in every respect, and one of them did remarkably well and the other one died. We are inclined to think that September is the best month; but we confess being uncertain on this point. Much depends on the condition of the tree to be moved, and other circumstances, as one that has stood a number of years in one place—and that place a particularly good one—cannot well be removed without suffering more or less; and as it is a naked-rooted plant, a ball with it is not easily obtained. Securing every fibre carefully and planting the same again, and spreading out as carefully as a tree is nailed against a wall, will generally insure success; but the season and other circumstances have much influence on this.

SEEDLING PANSIES (L. F. F.).—We do not discern anything new among them. There are two tolerable flowers—the one with pale lemon ground, good eye, back petals, and belt of deep purple; the other orange ground, small eye, back petals, and belt maroon; but these are inferior to many named varieties. It is very difficult to decide upon the merits of a Pansy from a single flower. Unless three good specimens are sent of each variety we cannot hazard an opinion. The other specimens sent were deficient both in form and substance.

SEEDLING CYCLAMENS (Cyclamen Ignoramus).—You cannot do better than let your seed-bed, pan, or pot alone until the plants develop themselves. Continue to give them sufficient water to prevent their suffering from want of it, and no more. By-and-by you will be favoured with foliage, which continue to encourage until the end of the growing season; after which let the plants go to rest in some cool place, secure from frost and heavy rain, yet not entirely dry, and most likely you will have a number of roots like small potatoes, the largest of which will flower next year.

TEMPERATURE FOR EPACRISSES AND AZALEAS CUT BACK (*A Subscriber*).—The Azaleas may have 50° at first, increasing to 60°. The Epacrisse much the same; but increase the heat gradually, and give a rest first of ten days or a fortnight. See "Doings of Last Week." You cannot have a better guide than Keane's "In-door Gardening," which you can have from our office free by post for twenty postage stamps.

SWEET-SCENTED GERANIUM AND VERBENA CUTTINGS (*Ignoramus*).—Nothing is more easy to strike than these, especially in spring, when cuttings may be put into ordinary sandy soil, with a little clean sand at top; and the pots being half plunged into some bed, with a little bottom heat, and slightly shaded for a few days, they speedily become plants; and by being allowed to remain there, the tops of Verbenas are often taken off and made into more cuttings. This is especially the case with scarce ones.

WATER FOR A CONSERVATORY (*A Subscriber*).—Why not have a tank sunk in the floor, with a gutter round the eaves of the roof communicating with the tank by a stock-pipe? We have found the rain collected from such a roof sufficient for the supply of all the inhabitants of a conservatory. If you live in the east of England, where the rainfall is least, the supply might not be quite enough. From such a tank, by the aid of a hydropump, you might water the plants easily and efficiently. If you fear that in excessive rains the tank might overflow, could you not have an escape-pipe from it? The tank might be outside, and even at a distance, by continuing the stock-pipe to it; and then any little iron pump might be fitted to the tank. When the tank is inside the conservatory, the water is always of a genial temperature.

RETARDING THE FLOWERING OF FUCHSIAS, GERANIUMS, &c. (*W. Miller*).—The greenhouse varieties of Pelargonium may be kept from flowering by being placed on the north side of a wall after being repotted, and pinching off the flower-buds as they appear, until the time when they are wanted. A like treatment will also enable you to have Scarlet Geraniums in good condition; or, if you let the latter flower as early as you can, and then cut off all the flowers and repot, the second crop will come in about the time you speak of. Fuchsias, when good, remain long enough in flower to satisfy most people; but you may retard them by turning them out of doors; and, if they were plunged in a gentle hotbed, with their tops quite exposed, short-jointed fine-grown plants would be just coming into flower at the time you want them. We do not know of any work bearing on the treatment of these particular plants, but much may be learned by reading our back Numbers on this subject.

GERMAN ASTERS ATTACKED BY BLIGHT (*H. C. Horton*).—This is a very common occurrence, but coming at a particularly busy time it is often neglected. A syringing with tobacco liquor will be of much use; and if any tokens of insects appear on the plants at the time of transplanting, it is easy to dip their tops in a weak decoction of tobacco. Generally speaking it is an aphid that is the cause of this evil. If, however, it be a mildew, sulphur may be applied; but this cannot be done so well except at the planting time, when their tops being dipped in tobacco liquor as above, they may then be dusted with sulphur, and will do much towards preventing the evil complained of.

WIND INJURING NEWLY-PLANTED CALCOLARIAS, &c. (*W. C. H. D. A.*).—It is not unlikely but the late winds may have been hurtful, if not fatal, to a great many things; but in your case we would advise the Calcocalarias being left alone, when they will recover in time. We suspect your plants have been too much coddled before planting-out. Ours of the same kind were planted-out early in April, having previously been fully exposed for some weeks before; and now they are dwarf, bushy, fine plants, only waiting for a good rain to start them into vigorous growth and flowering. Cutting down the plants in their present condition will only retard their ultimate success. If you had taken the precaution of sticking or laying a few laurel boughs over your bed, much injury from the wind would have been averted.

PROPAGATING DOUBLE CHINESE PRIMULA (*H. T. G.*).—You must wait until you can obtain side shoots about $\frac{1}{2}$ inch long, when they may be taken off with the knife and inserted in sandy peat, and placed in the striking-pit or hotbed. Generally, it is best to allow a plant to grow to a good size and then to cut it into pieces, and each cutting or side shoot will become a plant. This is better than mutilating specimens, as they furnish cuttings only tardily.

NAMES OF PLANTS (*S. Lake*).—1, *Rhododendron glaucum*; 2, *Boronia tetrandra*; 3, an *Oxalis*, apparently *violacea*. (*M. B., Staffordshire*).—Nothing but *Cystopteris fragilis*, though a small neat form. In *Gladiolus* the accent is on the *i*; in fact the *o* is not pronounced at all. (*H. P. D.*).—1, *Koniga maritima variegata*, or *Alyssum maritimum variegatum*; 2, *Arabis alpina variegata*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY SHOWS.

MAY 28th. NORTH HANTS. Sec., Mr. Henry Downs, Basingstoke. Entries close April 23rd.
JUNE 3rd. BEVERLEY. Secs., H. Adams and J. Kemp, jun.
JUNE 11th. THORNE. Sec., Mr. Jos. Richardson.
JULY 2nd. PRESCOT. Sec., Mr. James Beesley.
JULY 20th to 24th. WORCESTERSHIRE. Sec., Mr. J. Holland, Chesnut Walk, Worcester. Entries close June 20th.
AUGUST 29th. HALIFAX AND CALDER VALE. Sec., Mr. W. Irvine, Halifax.
SEPTEMBER 2nd. COTTINGHAM. Sec., Mr. J. Brittain.

QUERIES ABOUT BIRDS FOR EXHIBITION.

A VERY valued correspondent wishes for a sort of chatty paper on points that have an interest for him just now. We believe many are in the same predicament; and as it is rather soothing to our ideas of our own knowledge of the subject and of our own position in the poultry world to be appealed to, we think we will have a familiar "talk" with our friends. We will dismount and speak with them on level ground.

We know the difficulty of getting perfect birds as well as any

one—we consider it almost an impossibility. Our correspondent puts it so well and truthfully, that we cannot do better than quote from him. "You know the difficulty of getting a perfect bird; and when by eye you have selected an Apollo, you find on handling his breast is a few degrees out of the straight line. Would such a fault be destruction to his hopes as a prize bird?" If the competition were very close we say it would, but it must be very close. There is only one breed in which a crooked breast is a positive disqualification, that is in Game.

We think we can easily show why that is venial in one which is fatal to the other. The ends of the two breeds are opposed. In one we want hard flesh and feather, perfect symmetry and harmony of shape, the greatest possible endurance and activity. The two last properties must depend, not only on faultless proportions, but on strength of constitution.

It is undoubtedly true that in some cases a crooked breast is an hereditary failing, but in others it is the result of fast growth and of early hatching. The Game fowl is not hatched in January; his properties can be developed only by taking advantage of every favourable circumstance—warm weather, short nights, and natural season: hence he generally enters the world in April or May. He is not bred for the table, and is treated with stimulants at all ages. The Dorking is the reverse. He is bred only for the table. Hardness is a defect with him when a chicken; nourishment is substituted for stimulants. He is required to be quiet and easy to acquire size and to put on fat. The profit of the breed depends much on early hatching. The chickens see the light in January; by dint of food and painstaking they are large chickens in March—too large for maternal care, and they perch. This is the root of the evil. The sharp, clever, strong Game chicken clasps the perch with his toes, holds on securely and without effort in July when he is three months old. The heavy forced Dorking is a large fowl at the same age, and he attains it in March. He has to perch five hours longer than the Game; his large long frame and rapid growth, unfavourable to muscular development, have not strength in the feet to clasp a perch and maintain the position by the mere fact of doing so. He attempts it, but the feet get gradually wider apart, and the body descends little by little till at last the long cartilaginous breastbone rests on the perch, and it remains there during the long hours of a winter's night. As this is constantly occurring, there is small wonder if it takes the form of the perch, or, at least, contracts a curve. It seems to us that this explains why the same thing may disqualify one bird and be allowed in another. We still hold a crooked breast to be a defect, but we do not think it should disqualify a Dorking.

Now we have to deal with another query. "Which is the greater fault—a somewhat irregular foot or curvature of the breast?"

We do not know what an irregular foot is. Has it only four toes? Is it clubbed? Is it turned the wrong way? Whichever it may be, we prefer the breast-curvature for competition. This latter will be detected by handling only. The other is plain to the sight, and will at once disqualify, rendering useless all the good qualities that handling might discover.

"Are very early birds to be relied on for Birmingham? My January pullets are laying."

April and in some cases May birds are early enough for winter exhibition; as a rule among pullets we would at a December show rather take May than January birds for success. The latter are hens.

"Do you think it well to keep the sexes separate?"

In selecting birds either for stock or exhibition we would always keep them separate if we could. It is more important for the cocks than pullets. If they can be kept separate till they are eight or nine months old it is much in their favour.

AGRICULTURAL HALL POULTRY SHOW.

IN connection with the Great International Dog Show that is held during the present week at the new Agricultural Hall at Islington, a Poultry Show has been organised.

This is held in the minor hall, a very large well-lighted structure that is admirably adapted for the purpose. The pens, which are of wire, are arranged round the sides, and also form three double rows down the centre, with wide aisles between capable of accommodating a very large number of visitors.

The general management is in the hands of Messrs. Douglas

and Blythe, both well known as possessing great experience in conducting poultry shows to a successful termination.

At this early period it is impossible to give a detailed and very critical account of the proceedings, which must of necessity be deferred until next week's Journal. We may say that most of the well-known exhibitors have entered, and that the Game classes are unusually full and good for a London show. Dorkings, of course, are well represented, and all the varieties of Hamburgs muster in very good force.

Subjoining the prize list we defer our further remarks until our next issue.

SPANISH.—First, Viscountess Holmesdale. Second, R. Wright. Third, J. Root.

DORKING.—First and Second, Viscountess Holmesdale. Third, J. Drewry.

COCHIN-CHINA (Buff or Cinnamon).—First, C. T. Bishop. Second, T. Stretch. Third, S. Statham.

COCHIN-CHINA (Any other colour).—Captain Heston. Second, R. Chase. Third, E. Tudman.

HAMBURGH (Golden-pencilled).—First, J. E. Powers. Second, N. Barter. Third, A. Nuttall.

HAMBURGH (Silver-pencilled).—First, Viscountess Holmesdale. Second, H. Beldon. Third, J. Dixon.

HAMBURGH (Golden-spangled).—First, S. H. Hyde. Second, N. Marlor. Third, H. Carter.

HAMBURGH (Silver-spangled).—First, T. Davies. Second, H. Beldon. Third, H. Carter.

GAME (Black Reds).—First, Capt. Wetherall. Second, J. Fletcher. Third, S. Matthew.

GAME (Brown Reds).—First, Rev. F. Watson. Second, M. G. Ashwell. Third, S. Matthews.

GAME (Duckwing).—First, R. Gilbert. Second, J. Fletcher. Third, G. W. Langdale.

GAME (Any other variety).—First, W. Dawson. Second, H. Adams. Third, Rev. G. S. Cruwys.

ANY VARIETY (not named).—First, T. P. Edwards (White-crested Black Polands). Second, P. P. Cother (Pheasant Malay). Third, J. Dixon (Polands).

BRAMA POOTRAS.—First and Third, C. Priest. Second, J. Hinton.

GAME BANTAMS (Any variety).—First, R. B. Postans. Second, W. J. Forrest. Third, G. Manning.

BANTAMS (Gold and Silver-laced).—First, Rev. G. S. Cruwys. Second, T. H. D. Bayley. Third, G. Manning.

BANTAMS (Other varieties).—First, Capt. F. Marten (Japanese Mufflers). Second, Capt. Wetherall (White). Third, Miss K. Charlton (Black).

SWEEPSTAKES.

GAME COCKS.—First, J. Stubbs. Second, H. Adams. Third, A. B. Dyas.

BANTAMS (Game).—First, T. H. D. Bayley. Second, N. Sykes, jun. Third, J. Camm.

JUDGES.—Mr. Hewitt, Sparkbrook, Birmingham; and Mr. Tegetmeier, Muswell Hill, London.

GAPES IN FOWLS.

UPON the parasitical worm causing this affection in poultry and some other birds, Professor Simonds recently made the following observations:—

"With regard to fowls and the existence of worms in their windpipes; in that case the worm is not the *Filaria bronchialis*, nor is it allied to that description of worm.

"It is termed *Syngamus trachialis*, and believed to be the connecting link between the bi-sexual worm and those in which the sexes were separate and distinct. The worms very rarely exist in larger numbers than about two or three, though he had met with as many as five in the windpipe of a chicken. It is a true blood-sucker—in fact, a leech. It fixes its head in the mucous membrane, and exhausts the power of the chicken by sucking its blood.

"Another curious feature in reference to this worm is, that it is met with in all the gallinaceous tribes of birds, whether wild or domesticated: hence it is the cause of great loss in the rearing of Pheasants and Partridges. Great numbers of Rooks also are killed by it; but, singularly enough, aquatic birds, such as Ducks and Geese, might march about with perfect impunity amongst thousands of other things affected with the *Syngamus*.

"The mode of getting rid of the worms is entirely mechanical—passing a feather into the trachea, and giving it a sweep round. The worm attaches itself to the barbs of the feather, and so is brought away. That being the case, there is no occasion for the feather to be dipped in turpentine; on the contrary, dipping the feather into turpentine is more likely to kill the chicken. A great many chickens, however, are destroyed by this means; and he believed that they could best get rid of the worms by making the birds inhale a medicated air, and inducing them to take up little pellets of food mixed with assafetida and turpentine. Let a few grains of barley, for example, be steeped in turpentine, and be thrown down with others to the poultry. The birds would then pick up the grains indiscriminately, and if they picked up

the steeped grain with the other the worm would thus be got rid of. The fumes of tobacco are also an excellent remedy. Let the chicken be placed under a tub propped up a little on one side; then burn the tobacco on the outside, and let the draught carry the smoke into the tub. Do this, and with the assistance of assafetida pills, they would even destroy the *Syngamus trachialis*."

FOOD OF CHICKS PREVIOUS TO WEANING.

STOPPY matters are better avoided till the little things are old enough to eat a few grains of good wheat, of the best sample, which will not be thrown away upon them. Meat and insect diet are almost necessary; but raw vegetables chopped small, or Indian meal dough, containing no salt, so grateful to young Turkeys, are *caviare* to chickens. But whatever the bill of fare, the meals must be given at short intervals; as much as they can swallow, as often as they can eat. The reader will please to remember that when he came into the world, all that was expected of him was to grow and be good-natured. He had not to provide his long clothes out of his mother's milk, nor to elaborate pinafores from a basin of soaked biscuit: but for poor little chickens, the only known baby-linen warehouse is situated in their stomachs. And with all their industry, they are only half clad, till flesh and blood stop growing for a while, and allow down and feathers to overtake them.

The period at which they are left to shift for themselves depends upon the disposition of the hen. Some will continue their attentions to their chicks till they are nearly full grown, others will cast them off much earlier. In the latter case, it may be as well to keep an eye upon them for a few days, till they have established themselves as independent members of the gallinaceous community; for chickens, in this half-grown state, are at the most critical period of their life. They are now much more liable to disease than when they were apparently tender little weaklings crowded under their mother's wings. It is just before arriving at this point of growth that artificially-hatched chickens are so sure to fail, whether hot air, hot water, or sheep skins be the substitute for the mother's care.—(*Prairie Farmer*.)

FOOD ESCAPING FROM BOTTLE-FEEDERS.

LIKE your Devon contributor at page 303, I too was prone to ascribe the very considerable slope my boards had when the bees were solely under the protection of the straw hackle, having something to do with the evil (but not a wide-mouthed bottle, as I have never fed with one over an inch), the more so as I was once greatly surprised in the spring at the effect an extreme slope had on the ventilation of a colony, causing an amount of evaporation at the entrance, far in advance of the colony's real strength.

Some alterations in my apiary at the end of last season induced me to bring the boards exactly level, without at all affecting these disagreeable escapes of food. One of my best queens, by the way, the last time I had the pleasure of an interview, I observed had her full share of this unwelcome shower-bath.

The cue to solve the enigma is, that such escapes rarely occur but in the mornings, and then almost invariably after frost. Upon discussing with your last-named correspondent this same leakage question in No. 36, I recorded having found quite an accumulation of food on the board of a weak colony, which perished during a long frost, an unemptied bottle being upon the board.

Whether or not the frost causes the bees to desist from removing the food is the explanation, or if it in any way effects some change on the suspended food itself, liquifying it to a certain extent, and inducing the running at a milder temperature may possibly be explained by some of your correspondents more philosophical than—A RENFREWSHIRE BEE-KEEPER.

BRITISH BEE-BOOKS.

IN the series of articles, of which this is the first, I propose giving a short account of all the distinct treatises on bees which have been published in the United Kingdom. Several incomplete catalogues of apian works exist. There is an alphabetical list of bee-books in the Rev. W. C. Cotton's "Bee-Book." This, however, is imperfect, and appears to have been a list of the works in the author's library.

In Milton's "Practical Bee-keeper" there is a list of writers names chronologically arranged. This last, like Mr. Cotton's

includes foreign as well as English writers, and comprises the names, not only of the authors of distinct treatises, but also of those who have made the slightest allusion to bees or bee-keeping.

The plan I propose to adopt differs essentially from either of these. I intend to give the titles of the works in full, with the date of every edition, the size, number of pages, &c., and to append a short account of the character of the work.

I hope to include every separate treatise, however small, and also the more important articles from the proceedings of learned societies. Articles in magazines and newspapers will not be noticed, as it would be impossible to compile a complete list of these fugitive papers. The list will be arranged chronologically, the time being taken from the publication of the first edition.

I conceive that I possess peculiar qualifications for the task I have undertaken. I have a great interest in the subject, and am in possession, I believe, of the most extensive collection of apian works.

I cannot hope, however, to make my list complete without the assistance of the numerous collectors of bee-books. Many works may have escaped my notice; and should I omit any, I hope some of the readers of *THE JOURNAL OF HORTICULTURE* will help to render it complete. As it is proposed to publish the list subsequently in a separate form, any suggestions that may increase its value will be very gratefully received.

The first distinct English treatise on bees of which I can gain any intelligence is that of Hyll or Hill, published 1568.* The Rev. W. C. Cotton, however, gives a title as follows:—

"Bee, a numerous genus of insects, which have attracted an uncommon share of attention in all countries, and in every age, on account of their Industry, Art, and Utility. 1539." It appears obvious that there must be some mistake—the language of the title is not that of the period; nor can I find any such book in the British Museum or other library. Can any readers of the *Journal* give information on this work? In the meantime, regarding Hill's as the first English treatise on the subject, I give the titles in full.

1568. HILL. "A pleasaunt Instruction of the parfitt orderinge of Bees with the marueilous nature propertie and gouernement of them and the myraculous uses, bothe of their honny and waxe (seruing diuersly) as well inward as outward causes; gathered out of the best writers. To which is annexed a profitable treatise intituled certain husbandly coniectures of dearth and plentie for euer, and other matters also meet for husbandmen to knowe and which is now Englished by Thomas Hill, Londyner. 1568."

This edition has a portrait of the author at the back of the title, and at the end "Imprinted at London in Fletestrete neare to S. Dunstones Church by Thomas Marthe. 1568." This edition is in 12mo. black letter; and, like the other editions, is appended to his "Arte of Gardening," but is pagged separately and has a distinct title. The first edition of Hill's Gardening is in 12mo. London, 1563. It is entitled "A most briefe and pleasant treatyse teachynge how to drees sow and set a garden." This edition does not contain the treatise on bees.

The subsequent editions of Hill's treatise vary so much in the title and size that it is desirable to print that of 1574.

1574. HYLL. "A profitable instruction of the perfite ordering of Bees, with the maruellous nature, propertie, and gouernemente of them and the necessarie vses both of their Honie and waxe seruing diuersly, as well inward as outward causes: gathered out of the best writers. To which is annexed a proper Treatise intituled: Certain husbandly coniectures of dearth and plentie for euer, and other matters also meete for Husbandmen to knowe, etc. By Thomas Hyll. Londoner. Imprinted at London, by Henrie Bynneman. Anno 1574." Small quarto, fol. 88. Black letter.

This edition has on its last page "Imprinted at London by Henrie Bynneman, dwelling in Knightryder streate at the signe of the Mermayde, anno 1574," and printer's monogram of mermaid.

1579. This edition, quarto, fol. 92, was also printed by Bynneman.

1586. The edition of this date has the same title, with imprint as follows:—"Imprinted at London by Robert Waide-graue. 1586."

1593. Same title. "Imprinted at London by Edward Alde. 1593."

* The earliest printed work on the subject is, I believe, an extremely rare continental work in monkish Latin. Date about 1510, with a running title, "Boni universalis de proprietatibus apum." Of this curious book I hope to give some account at a future time.

1608. Same title, except "By Thomas Hill, Londoner. Imprinted at London by H. B. 1608."

All these editions of Hill are in the library of the British Museum. Hyll's treatise contains little practical instruction, and is confessedly a compilation from "the bookes and volumes of many and diuers antient writers." Butler, in the preface to his "Feminine Monarchie," speaks of Georgius Pictorius, a learned Physician, as having taken most paines in perusing the ancient authors, and adds: "Whom one T. H. of London translating word for word into English, as well as he could, concealing the authors name, adventured to publish in his owne name."

Hill's work is divided into forty chapters, the titles of which give a very good idea of the nature of the information they contain. Thus "Chap. 3. How bees do naturally engender." "They lay eggs," says our writer, "setting on them as hens do on their eggs, and when they have sit on them for the space of 45 daies they do hatch their yong ones which yong at the first do come forth much like to white wormes except the king who only as he is hatched hath wings." Chap. 8. "The marueilous gouernment of the king of Bees and of the obedience which the vse to him."

In the chapter on the best kinds of hives, he describes English hives as being of straw, and says that the hive ought to be 1½ or 2 feet high, and in breadth above 2½ feet or somewhat larger; and in chapter 3 he describes observatory-hives formed of thin and clear horne belonging to a certain Consul at Rome, in which Guilielmus de Conchis observed the different kinds of bees.

The method of obtaining the honey from the hives was by making a smoke by burning linen rags or straw in a pot, setting this within the hive, and subsequently turning the hive up and cutting out the surplus combs.

In Milton's chronological list the next work is "1572, Anonymus." I know of no work corresponding to this date, nor did I see any at the sale of Mr. Milton's books.

May I be allowed to ask that any of my readers who have other apian works before 1600 will kindly oblige me with the titles in full?—W. B. TEGETMEIER, *Muswell Hill, London, N.*

[THOMAS HILL, HYLL or HYLLE, was a mere booksellers' hack, writing upon any subject required, and being no authority upon any. Works of his are extant on arithmetic, astronomy, bees, dreams, divinity, gardening, and physiognomy. He was probably a native of the metropolis, for on all his title-pages he is entitled "Londoner." One work, "The Gardeners' Labyrinth," he published under the name of "Didymus Mountain," which are only mongrel synonymes of his real name "Thomas Hill." He was dead when an edition of that work was published in 1586.—EDS. J. OF H.]

OUR LETTER BOX.

ROUFFY FOWLS (*C. J. S.*).—As a rule no fowl can be depended upon that is bought out of a coop in London, as seven-eighths are either diseased or will be in a day or two. The condition in which they are seen explains this—in a confined cage or basket, not always the cleanest in the world, injudiciously fed, and deprived of almost everything that is necessary for health, instead of fresh air and cleanliness, they are packed closely with all sorts of disease, and the coups are never untended. Kill all the worst cases. Have every house thoroughly cleansed and lime-whited. Feed your fowls freely on bread steeped in strong ale, and as soon as you have any grass carried, let them have the run of the fields. Above all, let the hens and chickens be put there.

HEN PIGEON NOT LAYING (*J. Robinson*).—Your hen sitting on a nest but not laying, is most probably barren. The only treatment likely to be of service to her is to give her an egg or a pair of eggs to hatch and rear the young. Afterwards, possibly, she may lay. Barren hens are by no means uncommon.

CANARIES DYING (*W. H. H.*).—The only reason we can assign for your birds dying in your mixed aviary is that the stronger birds will not allow the weaker to feed. We would recommend you to place more feeding-boxes in the aviary. The oiled boards do not affect the birds.

ILL-FLAVOURED BUTTER (*M. W. H.*).—The plant you enclose is *Ranunculus acris*, about the most blistering of the genus, and usually avoided by cattle. If your cow has only a small pasture, and this weed abounds, it is possible she may eat it, and that it may cause the butter "all through the year to have a bitter and often a semi-rancid taste." You may eradicate the weed by having it pulled up by the roots as often as it appears, which can be easily done after rain. On no account let it seed. Those who pull it up should wear gloves, or their hands will be blistered and inflamed by its juice.

DARK LIGURIAN DRONES (*J. L.*).—The drone accompanying your letter is so dark as not to be distinguishable from the common species, and yet it may be true Ligurian for all that. Some of the purest queens breed very dark drones, and, what is very singular, these sometimes become the fathers of a more than ordinarily handsome Ligurian progeny.

WEEKLY CALENDAR.

Day of Mnth	Day or Week.	JUNE 2-8, 1863.	WEATHER NEAR LONDON IN 1862.						Moon Rises and Sets	Moon's Age.	Clock after Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.				
				degrees.			m. h.	m. h.	m. h.		m. s.	
2	Tu	Prickly Stonewort flowers.	30.030-29.977	79-52	S.W.	—	50 af 3	5 af 8	55 8	16	2 23	153
3	W	T. Martin, jun., died, 1825. B.	30.095-30.092	69-41	S.W.	.02	49 3	0 8	47 9	17	3 14	154
4	Th	Privet flowers.	30.153-29.941	72-44	S.W.	—	49 3	0 8	28 10	18	3 4	155
5	F	Tournefort born, 1656. B.	29.810-29.615	65-30	W.	.28	48 3	8 8	1 11	19	1 54	156
6	S	Enchanter's Nightshade flowers.	29.632-29.514	67-55	S.W.	.03	47 3	9 8	27 11	20	1 44	157
7	Ses	1 SUNDAY AFTER TRINITY.	29.781-29.683	71-48	S.W.	.06	47 3	19 9	59 11	21	1 33	158
8	M	Butterwort flowers.	29.928-29.815	71-36	S.W.	—	46 3	11 8	morn.	(	1 22	159

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 69.1° and 46.3° respectively. The greatest heat, 90°, occurred on the 7th, in 1840; and the lowest cold, 35°, on the 5th, in 1856. During the period 141 days were fine, and on 111 rain fell.

GARDENING IN DEFIANCE OF DIFFICULTIES.



Cape of Good Hope and the South Pole.

Gardening is not less enthusiastically clung to; and as it is among our pursuits most worthy of such adherence, so most assuredly are those who pursue it among the most deserving of our fellow-countrymen. A few illustrative facts, therefore, merit recording.

If there is any locality where gardening would be abandoned, we should have expected that it would be in a region of perpetual snow, where artificial heat could not be obtained to compensate for the deficiency of solar influence. Yet even in such a region gardening lingers; and, in the beginning of August, the Rev. S. W. King writes thus about the Monastery of St. Bernard:—

“Before it became dusk we sallied out and faced the Spitzbergen-like weather for a scramble among the rocks and to the site of the ancient Temple of Jupiter. For some little distance from the Convent a sheltered terrace, scarped on the face of the rock, or piled on stones, and catching what sun there is when it shines, forms the only level bit of promenade the monks have outside their own walls. The further part of this, however, was now buried under a steeply-sloping bed of deep snow left from last winter, and almost touching the ‘Convent Garden’—two terraced patches within low walls, 4 or 5 yards square, in which grew a few tiny Lettuce, almost microscopic, and two or three equally diminutive representatives of the Cabbage tribe, name unknown. De Saussure’s description in 1778—‘Ils ont peine à produire à la fin d’Août quelques laitues et quelques choux de la plus petite espèce, pour le plaisir de voir croître quelque chose’—might have been written that week. Perhaps this forlorn attempt at a garden, with the thought that it was the height of their few weeks of summer, dark clouds of sleet sweeping over us, and whitening the little Lettuces, while we had left all bright and glowing in the valley below, gave us a more forcible impression than anything else of the dreary life of self-sacrifice to which these worthy men devote the best years of their existence.”

We all know that to the studious mind a change of subject, though still requiring thought, is a relief; yet

there are academical studies of such dry abstract quality, and requiring such a peculiar mental formation, as would lead to the belief that they could have no sympathy with gardening, and mathematics would seem to be of that quality—yet Humphrey Newton, who acted for some years as Sir Isaac Newton’s amanuensis, speaking of Sir Isaac’s habits whilst at Trinity College, says:—“He was very curious in his garden, which was never out of order, in which he would at some seldome time take a short walk or two, not enduring to see a weed in it.” Nor did Sir Isaac restrain his gardening efforts to the small enclosure of his own garden; for he endeavoured to establish cider orchards at Cambridge, and the following, written in November, 1676, was addressed to Mr. Oldenburg, then Secretary of the Royal Society:—

“I am desirous to write to you about procuring a recommendation of us to Mr. Austin, the Oxonian planter. We hope your correspondent will be pleased to do us that favour as to recommend us to him, that we may be furnished with the best sort of cider fruit trees. We desire only about 20 or 30 grafts for the first essay, and if these prove for our purposes they will be desired in great numbers. We desire grafts rather than sprags, that we may the sooner see what they will prove.”

In more modern times we have read of a well-known University Professor who adhered to gardening, though his pallisaded plot required for culture no tool larger than a trowel, and whose enthusiasm gave rise to this witticism—

“Professor Jowett a little garden made,
Enclosed within a little pallisade.
A little garden taketh little wit to show it;
And little wit had little Doctor Jowett.”

Turning to the soldier, we might expect that whilst on active service his spear would never be resigned for the pruning-hook. Yet this is not so; and even the Duke of Wellington, when Colonel Wellesley, resolved to cultivate Potatoes in Mysore as they were cultivated in Ireland, his native country. He sent presents to English ladies in Mysore of Cabbages and Celery, plants he had reared around the blood-stained walls of Seringapatam, and seemed as proud of his gardening in peace as of his generalship in war.

Nor is such an adherence to horticulture only within the power of a commander-in-chief; for we read that whilst our army was beleaguering Sebastopol Lord Raglan repeatedly visited the tent of Colonel Shadforth, then commanding the 57th, and was so much pleased with the great taste displayed, the small garden laid out with the greatest nicety. Roses trained so as to form a covered approach to the poultry-yard, and the whole in such good keeping, that the Commander-in-chief was pleased to observe, “Henceforth, when addressing any communication to you, I shall address you, ‘Colonel Shadforth, Shadforth Castle.’” On one occasion, when he walked to Balaklava to make arrangements for the comforts of his men, he lost his way, and did not reach the camp until twelve o’clock at night, and he was considered to have been taken prisoner. Upon its being

known that he had safely arrived, a great many of the 57th turned out, and gave three hearty cheers of welcome, to the astonishment of many in the camp.

The taste descended to still lower grades, and the well-known correspondent of the *Times* has left this record from the camp:—"The taste for gardening is, I am glad to say, well developed; and it is all the more graceful and laudable that it is indulged in under the most disadvantageous circumstances. Most seeds have a decided cryptic character here, and refuse to come up and look at the sun. If they do, there are rats, the cats, the dogs, and the fowls at them night and day—besides flies and ants, and creepers of an infinite variety and shape, and a multiplicity of legs, claws, teeth, and nippers. The French have been more successful than ourselves; perhaps they had better ground, and paid more attention to watering. Their little gardens by the Tchernaya are quite green, ours are generally of a fine Vandyke brown. Military horticulture is of an eminently culinary character. None of your Fuchsias or Camellias, or pretty plants and flowers with ugly names, but strong-smelling, vigorous potherbs—they are the *desiderata*. An acre of Mignonette is not worth a square yard of 'Spring Onions'—miles of glowing Orchids would not be compared for a moment with a few Lettuces, or even a good bed of Dandelions, of which the French have taught us to make a pungent and excellent salad. The longing for 'green meat' is but imperfectly satisfied, notwithstanding the number of coasters which come into Balaklava, and notably into Kamiesch, laden with vegetables. When a man asks you to dinner, his lure is not fish or game, or even a turkey, or a bustard from Sinope, but 'a jolly salad.'"

Let us pass next to within the prison's walls and cells. Locks and bolts and chains cannot exclude gardening even from thence. Man loves to look upon plants—if only, like Ophelia's Rosemary, "for remembrance." Warren Hastings bore evidence to this feeling. His partiality for his seat at Dalesford, bought on his return from India, is well known. "There is a small wood near the house," he said to Lord Redesdale, "the flowers and paths of which I had on my mind all the time I was in the East. In the house I passed much of my infancy, and I feel for it an affection of which an alien could not be susceptible."

Then who does not know the story of "Picciola" and the plant which soled the prisoner? Turning to more modern times, and scarcely able to credit that so recently as 1811 Leigh Hunt and his brother were tried, condemned, and imprisoned in Horsemonger Lane Gaol for speaking of the Prince Regent as a middle-aged Adonis! we find Leigh Hunt thus describing how he triumphed over the tyranny:—

"I papered the walls with a trellis of Roses; I had the ceiling coloured with clouds and sky; the barred windows were screened with venetian blinds; and when my bookcases were set up with their busts and flowers, and a piano-forte made its appearance, perhaps there was not a handsomer room on that side the water. Charles Lamb declared there was no other such room except in a fairy tale. But I had another surprise, which was a garden. There was a little yard outside, railed off from another belonging to the neighbouring ward. This yard I shut in with green palings, adorned it with a trellis, bordered it with a thick bed of earth from a nursery, and even contrived to have a grass plot. The earth I filled with flowers and young trees. There was an Apple tree from which we managed to get a pudding the second year. As to my flowers, they were allowed to be perfect. A poet from Derbyshire (Moore) told me he had seen no such Heartsease. Here I wrote and read in fine weather, sometimes under an awning. In autumn my trellises were hung with Scarlet Runners, which added to the flowery investment. I used to shut my eyes in my arm-chair, and affect to think myself hundreds of miles off. But my triumph was in issuing forth of a morning. A wicket out of the garden led into the large one belonging to the prison. The latter was only for vegetables, but it contained a Cherry tree, which I twice saw in blossom."

Than that we could have no more forcible illustration of the truth told in the old cavalier verse—

"Stone walls do not a prison make,
Nor iron bars a cage;
Minds innocent and quiet take
These for a hermitage."

The courts and alleys of the democratic portions of London are in some respects worse than prisons, yet gardening is not banished even from them.

We have often wondered what extent of cultivation these minds, in the neglected parts of London, are capable of, that display so much refinement in the assiduity with which they nurse a wild Daisy, or Primrose, in a fractured teapot or ginger-beer bottle. There is surely something more than the mere animal development here. Our attention has been more immediately directed to this subject, in consequence of the immense quantities of the commoner flowers which are, at this season, continually forced upon our observation, both in the markets, in the streets, and on hawkers' trucks. The Primrose, Daisy, Wallflower, Polyanthus, and Southernwood, are among the most popular; and in almost every lane, alley, and court, may be seen the various degrees of success with which these are kept in life. It is not only in the dwellings of the poor, however, that we have remarked this fondness for gardening. It would seem that some, who, perhaps, have no dwelling at all, or such an one as does not afford the facilities for indulging even this harmless gratification, resort to other means; and it was but the other day we encountered, in our peripatations, a well-cultivated and fertile spot on the fore-deck of a coal-barge! Who of our readers would ever have dreamt of a flower-garden in such a spot? Even our assiduous friend, Mr. Beaton, with all his train of fair followers, could never have thought of looking for a flower garden in such a spot, and that, too, floating on the very bosom of old Father Thames. And a very pretty garden it was. There were no circuitous walks, no ingenious devices, no grouping of colours; but there were some bright Anemones, of all colours; Polyanthuses with trusses as Polyanthuses never trussed before; double lilac Primroses; Hen-and-chicken Daisies, eclipsing in interest the finest poultry-yard of the greatest fanciers; lumps of Stonecrop, trailing down the sides of old tin tankards; "Bloody-walls," or "Warriors," looking as gay as any officer of the household guards; "Daffydownillies," as our ancestors called them, all rich in beauty, and some replete with fragrance; with here and there bushes of grim Southernwood, and the whole artfully and tastefully enclosed with an edging of the whitest of oyster-shells. We have interesting scenes in London which the rest of the world know not of; and such a scene as that now described is more gratifying to us by far than the luxurious and ready-made window decorations of Belgravia.

There is one place yet where a novice might not expect to find a love of plants lingering—the chamber where sickness has long saddened, and in which death is looked to as a rescuer. Even there the love of vegetable beauty, cultivated plants and their associated memories, are still cherished.

"During our late visit to the distressed districts," says the editor of that excellent periodical, "The British Workman," "we met (in a cottage in Wigan) with a pleasing illustration of the value of a flower. Although the man and his wife were starving

for food, and many articles of furniture had been disposed of for bread, we were interested by seeing in the window a beautiful plant.

"On remarking, 'Ah, my friends, I am glad to see that you are fond of plants. Be assured that He who cares for the flowers of the field, and the birds of the air, will not be unmindful of you; He will surely send you help.'"

"'Oh, yes, sir,' was the reply, 'we should not like to part with that.' In further conversation, we found that the little plant was truly a comforter to the worthy couple in their distress and solitude.

"Very similar is this case to that of the poor dying female, who was once found laid on a straw pallet in a garret; not a single article of furniture in the room, but in the window stood a little plant. To the visitor she said, 'As I have watched that little plant grow, I have been comforted with the assurance that God, who made it, cares for me.'"

"Fathers and mothers, train up your boys and girls in the cultivation and love of plants. It will do good to them as well as yourselves. Flowers are comforters!"



THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITION.—MAY 27.

THE vast area of the Great Exhibition, so long empty and silent, was on Wednesday last again full of life and bustle, for it was there that the first of the great Shows of the Royal Horticultural Society was held. The structure would have sheltered an unlimited number of visitors from the weather; but fortunately its capabilities in this respect were not put to the test, for the day was one of the loveliest of early summer, and free from those chilling north-easters which have lately prevailed to the alarm of the gardening community. The attendance of visitors was, consequently, very large, notwithstanding that there had been a flower show at the Regent's Park but a week before, and one at the Crystal Palace only the Saturday previous.

Just before the general public were admitted, their Royal Highnesses the Prince and Princess of Wales, attended by the Duke and Princess Mary of Cambridge, honoured the Show with a visit. They were received at the entrance by his Grace the President and other members of the Council of the Society, and were escorted through the Exhibition by Mr. W. Wilson Saunders, the Secretary; and their Royal Highnesses, by the manner in which they examined the splendid examples of horticultural skill which lay before them, evinced an interest in horticulture that must have been highly gratifying to every lover of the art.

The objects exhibited were ranged on each side of the nave, which from its great breadth permitted a freedom of motion which is rarely enjoyed at floral exhibitions where crowding is usually the order of the day. Indeed, this was the only occasion in our experience when it was possible with a large concourse of visitors to examine the plants with comfort. We heard it objected by some that the height of the roof had the effect of making the plants seem less than they really were, and this certainly was to some extent the case, and it was urged that a screen similar to that employed at the Crystal Palace should have been used; but then it must be remembered that the roof there being of glass admits a much greater amount of light than that of the nave of the Great Exhibition building. It was, therefore, we think, wisely determined on the part of the officers of the Society not to resort to such an expedient, which, had the day proved less sunny than it was, would have inevitably caused too great an amount of shade.

The stove and greenhouse plants which were shown in the first four classes afforded of themselves a noble display; and in several instances the collections were so nearly balanced in point of merit, that the Judges must have had a most difficult task to decide which were the best.

In Class 1, for fifteen Stove and Greenhouse Plants, a first prize was taken by Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, with *Allamanda cathartica* and *grandiflora*, *Eriostemon nerifolium*, *Ixora alba* and *coccinea*, *Polygala acuminata*, a very large and fine *Erica Cavendishii*, *Tetrastemon ericæfolia*, *Chorozema Lawrencianum*, *Aphelexis sesamoides superba* and *macrantha purpurea*, *Pimelea spectabilis*, and *Azaleas Criterion* and *Murrayana*. All the above were handsomely grown, and some were of very large size. The second prize was awarded to Mr. Green, gardener to Sir E. Antrobus, Cheam, for a collection likewise of great merit, but some of the plants had lost their freshness from having been at the Crystal Palace. In addition to some of those already named, he had *Rhododendron Gibsoni*, *Dracophyllum gracile*, *Aphelexis macrantha rosea* (very fine), *Franciscea calycina*, *Pimelea Hendersoni*, a large *Eriostemon intermedium*, *Hedera macrostegium*, and *Azaleas Præstantissima* and *Juliana*. Mr. Baxendine, gardener to W. H. Smallpiece, Esq., Guildford, received a third prize, his collection, it is almost superfluous to state, being likewise excellent. It included a fine bushy *Rhynchospermum jasminoides*, *Aphelexis humilis rosea* and *macrantha purpurea*, *Iveryana Azalea*, and the double pink *Glory of Sunninghill*, *Stephanotis floribunda* (some of the flowers, however, looking rather dingy), a fine bushy *Erica depressa nana*, a large and fine *Erica Cavendishii*, *Boronia Drummondii* and *microphylla*, a fine *Coleonema rubra*, *Statice brassicæfolia*, *Chorozema Henchmanni* (beautifully covered with bloom), *Epacris heteronema*, and *Pimelea mirabilis*. Mr. Rhodes, who received a fourth prize, had among other specimens a fine *Phænocoma prolifera* in full bloom, a large *Erica Cavendishii*, *Hardenbergia monophylla*, *Chorozema cordatum*, and a fine *Erica coccinea minor*.

Class 2 was for twelve plants for nurserymen only, and here Messrs. Fraser, of Lea Bridge, were first. They had the fine

blue *Leschenaultia biloba major*, *intermedia* of the same genus, *Clerodendron Kämpferi* with its showy scarlet flowers, a large and very fine *Erica coccinea minor*, *Adenandra fragrans*, *Boronia serrulata*, and *Eriostemon buxifolium*; but the two *Azaleas Gledstanesii formosa* and *variegata* were anything but good, whilst the *Polygala* at the back appeared to be either past its best, or else was suffering from want of water.

Messrs. Lee, of Hammersmith, came second, with some very good plants, among which were *Phænocoma prolifera*, not fully out; a large *Erica Cavendishii*, a *Heath* which is deservedly a favourite with all exhibitors; *Allamanda grandiflora*; a nice bush of *Leschenaultia formosa*; *Adenandra speciosa*; *Hedera tulipiferum*; *Erica tricolor Wilsoni*; a small *Aphelexis macrantha*; *Pimelea Hendersoni superba*, and *Allamanda grandiflora*, with several of its large showy yellow flowers.

Mr. Cutbush, of Barnet, received a third prize for a collection in which were *Coleonema rubra* and *tenuifolia*, *Hypocolymma robustum*, and *Phænocoma Barnesii*. Messrs. Jackson & Son had fourth for an evenly-grown collection, containing *Clerodendron Thomsonæ*, *Labichea heterophylla*, a fine plant of the pretty *Erica ventricosa tumida*, a beautiful *Pleroma elegans*, &c.

In Class 3, for nine plants, Mr. Chilman, gardener to Mrs. Smith, Ashted House, Epsom, came in first, all the specimens being finely grown. They consisted of *Erica Cavendishii*, *Hedera tulipiferum* and *macrostegium*, *Aphelexis spectabilis grandiflora* and *macrantha rosea* (both fine, but the latter particularly so), a large *Acrophyllum venosum*, *Polygala Dalmaiziana*, *Pimelea Hendersoni* and *Franciscea confertifolia*, some of the bloom of the last rather spoilt.

Mr. Kaile, gardener to Earl Lovelace, came second with a handsome *Chorozema Lawrencianum*, a nice *Rhynchospermum jasminoides*, *Epacris miniata grandiflora*, and other plants already named.

Class 4 was for collections of six, and here Mr. Ingram, gardener to J. J. Blandy, Esq., Reading, was first with some very nice plants, the most striking, however, being *Aphelexis macrantha rosea* (which was a beautiful mass of flowers), and *Pimelea spectabilis*. Besides these there were a good *Stephanotis*, *Statice brassicæfolia*, *Hedera tulipiferum*, and *Erica Cavendishii*. Mr. Page, who obtained the second prize, had fine specimens of *Pimelea decussata*, *Hedera tulipiferum*, *Allamanda Schottii*, and a large *Erica Cavendishii*.

Mr. Smith, gardener to A. Henderson, Esq., Norwood Grove, was third. He had a fine *Hoya bella*, also a very good *Rhynchospermum jasminoides*.

Extra prizes were awarded to Mr. Penny, gardener to H. H. Gibbs, Esq., Regent's Park; Mr. J. Tegg, gardener to Baron Hambro', Roehampton; and to Mr. Wheeler, of Stamford Hill.

Among the Orchids were some magnificent examples of these gorgeous flowers, those from Messrs. Veitch being by far the finest, and, as might be expected, displayed to the best advantage, principally in large pans as unobtrusive as regards colour as possible. We wish we could say the same as regards the other collections, some of which were set up with little or no regard to effect; and in one, which was not only decidedly bad in this respect, the plants were in ugly tubs, or rather pails, with open sides, and by way of still further displaying the taste of the exhibitor, they were painted red. Another exhibitor used perforated covers over the pots and of similar materials to these, but quite new and clean; and they too were open to the objection that the eye would rest upon them and not on the plants. Such contrivances, so far as we know, serve no useful purpose, and afford an excellent harbour for insects, which at all times are sufficiently troublesome without being encouraged. Where the object is to display plants to the best advantage the quieter and more unobtrusive the colour of the pot or other utensil that contains them the better. Paint and varnish can add nothing to the beauty of the flowers, and when associated with these almost invariably displease.

Class 5 was for twenty Orchids. In this Mr. Milford, gardener to E. McMorland, Esq., Haverstock Hill, was first, having *Phalænopsis grandiflora*; *Cattleya lobata*, *Mossia*, and the beautiful variety of the latter called *aurantiaca*, in which the lip is stained with orange towards the edges; *Lælia purpurata splendens*, *elegans*, and *Bryasiana*, all of them splendid flowers, the last in particular; *Cypripedium barbatum superbum* and *villosum*; *Erises crispum*, *Fieldingii*, and *Larpenæ*; *Saccolabium curvifolium*; *Odontoglossum nævium* and *Phalænopsis*; also the dusky *Epidendrum nigro-roseum*, *Lælia grandis*, and *Vanda*.

tricolor *superba*. This collection from the beauty as well as great value of the subjects shown well deserved the first place.

Mr. Baker, gardener to A. Bassett, Esq., Stamford Hill, came next, and his collection was also of great merit, containing several beautiful examples, of which the following are a few—*Cattleya Mossiae*, *Vanda suavis*, *Dendrobium macrophyllum giganteum*, with three immense spikes, the curiously-spotted *Cypripedium Lowii*, from Borneo; *Lælia cinnabarina* and *purpurata*, *Cypripedium barbatum superbum*, *Anguloa Clowesii*, the red-flowered *Saccolabium curvifolium retusum*, and others, together with *Ærides* and *Oncidiums*.

Mr. Bullen, gardener to A. Turner, Esq., Leicester, came third, and had the same plants as exhibited at the Regent's Park and Crystal Palace. Among them were some fine *Ærides* and *Vandas*, together with *Orchis foliolosa*, &c. Mr. Peed was fourth.

In the Nurserymen's Class, 6, for twelve Orchids, Messrs. Veitch were first with a *Phalænopsis grandiflora*, with magnificent spikes of its large pure white flowers; *Cattleya Mossiae*; *Saccolabium guttatum major*, of which there were twelve fine spikes; *Cypripedium barbatum superbum*; a very large *Vanda tricolor*; *Vanda suavis*; *Calanthe veratrifolia*; *Ærides Larpentæ* and *Fieldingii*; *Odontoglossum Pescatorei*; *Chysis Limminghi*, and *Lælia purpurata major*, with eleven flowers. Mr. Woolley, of Cheshunt, was second, having also a nice collection.

Class 7 was for ten Orchids, and here Mr. Penny obtained the first prize. He exhibited *Cælogyne Lowii*, *Anguloa Ruckeri*, *Vanda suavis*, and good examples of other species already named. Mr. Page, who was second, had *Dendrobium formosum giganteum*, with its large white and yellow rhododendron-like flowers; the charming *Ærides Lobbi*, *Saccolabium retusum*, &c.; and Mr. Green and Mr. Chilman were likewise successful competitors.

In Class 8, for six Orchids, Mr. Wiggins, of Isleworth, had *Oncidium Lanceanum*; Mr. Smith, of Syon House, *Lycaste aromatica*, and a fine *Dendrobium nobile*; and Mr. Wheeler *Oncidium altissimum* with a very long spike of bloom. Mr. Wiggins had a first prize, the others stood second and third.

Decidedly the most brilliant feature of the Show were the Azaleas, which were immense masses of bloom, such as no one who has not seen the specimens which are exhibited at the metropolitan shows could believe it possible to produce. But on this occasion even persons who had been accustomed for years to exhibitions, expressed their surprise and unqualified admiration at the plants shown by Mr. Turner, Messrs. Veitch, and Mr. Green.

Mr. Turner, who showed the finest plants, had *Arborea purpurea*, a beautiful purple mauve; *Chelsoni*, *Glory of Sunninghill*, *Extranei*, *Criterion*, *Juliana*, *Iveryana*, *Murrayana*, and *Alba Magna*. These could not be less than 5 or 6 feet high, and were certainly from 4 to 5 feet through. They were finely grown, and so densely covered with flowers that scarcely a leaf was to be seen.

Messrs. Veitch who were second, had also magnificent plants, scarcely yielding to those from Mr. Turner. They consisted of *Magnificent*; *Extranei*; *Broughtoni*, very fine; *Perfecta elegans*, deep scarlet; *Mrs. Fry*, bright crimson; *Criterion*; *Trotteriana*; *Erquista*; and *Triumphans*, rosy crimson, large and fine.

Messrs. Fraser received a third prize for some nice pyramids, among which were *Holfordi*, rosy purple; *Lateritia*; and other sorts already named, but none of the plants nearly approached in size and beauty to the two collections above referred to.

Mr. Turner also exhibited several very fine plants in the Miscellaneous Class.

In the Amateurs' Class for nine, Mr. Green carried all before him, and though his specimens were not so large as Mr. Turner's, they were remarkably fine, being densely covered with bloom. One in particular, *Coronata*, which was placed at the corner where the nave and principal passage from the gardens intersected, was a perfect pyramid of rosy red, forming a glowing object even when viewed from a long way off. Among the others were the fine yellow *Sinensis*, *Perryana*, *Iveryana*, *Symmetry*, *Glory of Sunninghill*, and *Sir Charles Napier*. The second prize fell to Mr. Page, who had *Compacta*, small, but very densely covered with bloom, and good plants of *Juliana*, *Criterion*, and *Optima*. Prizes were also awarded to Mr. Lavey and Mr. Peed.

Class 11 was for six kinds; in this Mr. Penny was first, with *Madame Mieliez*, white, somewhat striped with rose; *Frostii*, *Juliana*, *Duke of Devonshire*, *Model*, and *Criterion*. Mr. A. Ingram, of Reading, had a third, and Mr. Wheeler a fourth prize, extra ones being also given to Mr. Lavey, Mr. Chilman, and Mr. Kaile.

Of *Rhododendrons*, which were shown in Class 12, only one collection was exhibited—that from Mr. C. Noble, of Bagshot. It consisted of *The Sentinel*, dark rosy purple; *The Princess*, white; *The General*, rosy purple; *Princess Alexandra*, deep rose, with dark spots; *Snowball*, white tinged with lilac; and *The Prince*, with a fine large truss of deep rosy crimson.

Prizes were offered for the best group of plants, showing effective arrangement for decorating a small conservatory, and for these there were several competitors. Mr. Turner obtained the highest award, Messrs. Veitch and Messrs. Lee being second and third. Mr. Turner's arrangement consisted of a compact mass, chiefly of flowering plants, with tall *Azaleas* at the back, and there appeared to be too small a proportion of graceful-foliaged plants. The arrangement of Messrs. Veitch and Lee afforded room to pass among the plants; and in the former flower and Fern stands were introduced, forming a nicely-balanced design, whilst Messrs. Lee had a vase and pedestal in front, round which a space was left to walk in, and beyond this the plants were ranged in three sides of a square, with the angles taken off. The other competitors were Mr. Bull, Messrs. A. Henderson & Co., and Mr. Shenton, of Hendon.

In the remaining classes there were several very fine exhibitions, particularly of *Roses* in pots, and *Pelargoniums*; but these it will fall to other hands to describe, while the subjects brought before the Floral and Fruit Committees will be noticed in our report of the proceedings of these bodies.

In the eastern arcades, besides the implements, &c., which have remained there since previous shows, some fresh ones made their appearance. Mr. Clarke, of Brackley, had his new and extremely light iron-handled scythe, so favourably reported on in our last issue; Mr. Read, of Regent's Circus, his excellent garden syringes, also tub engines, and a very efficient pail engine; Messrs. Warner, pumps, garden engines, and syringes, included among which were a double-action garden syringe, and an American garden engine apparently on the same principle. Messrs. Roshier exhibited garden edging-tiles. Flower-baskets, garden chairs, &c., of wirework came from Mr. Watts, of Brompton; and a model of a greenhouse with a double glass roof and sides, from Mr. H. Barnwell, of Colney Hatch. It is claimed for this that it possesses the advantages of economising fuel and preventing scorching, the confined air being a non-conductor of heat. Air is admitted both into the house and between the double glass by ventilators at the bottom.

POTTING HEATHS AND AZALEAS.

"ELIZABETH" deserves a most courteous answer were it for nothing else than her letter of inquiry being a model of what such a letter should be. Here it is as an example to those who, after a page or two, still leave us in a kind of maze as to the information they really want:—

"Elizabeth will be obliged by being informed if it is requisite to fresh-pot Heaths and Azaleas every year, and what time it requires to be done? Also the proper soil for each plant?"

Here are three questions in just as many lines. Well, then, the best soil for Heaths and Azaleas is heath soil—that is, soil composed chiefly of decayed vegetable matter mixed with the worn-down and disintegrated pieces of stone and rock, such as is to be found on elevated ground where Heath naturally flourishes. This differs in all its properties from what is usually called peat bog—such as the peats used for fuel—as that is always composed of vegetable matter more or less decomposed, but under water; and not, therefore, like heath soil, exposed to the sweet breezes of the atmosphere. This heath soil, if not naturally sandy, should have a little silver sand mixed with it. The soil itself should be a little rough rather than dust-fine. For instance, in a four-inch pot, a good part of the soil should be in bits like peas; for a six-inch pot a good portion should be in pieces like the size of field beans; and for an eight-inch pot a number of pieces should be as large as walnuts. Drainage should also be well secured, and the potting should be done firm. When plants get large and established, so as to need a large pot, say 10 or 12 inches in diameter, a little fibry loam may be used along with the heath soil; but in the case of young plants it will be best to keep to the heath soil. A few bits of charcoal for drainage will be an advantage, and some small pieces like small peas among the soil will help to keep it sweet and open.

Now as to the time of potting. Other things being suitable, the best time for potting is early enough in spring and summer,

for the roots to be pretty well established in the new soil before winter comes. In the case of Azaleas, the best time for potting is when the plant has finished flowering, and when after clearing away all seed-vessels and old flowers, the plants are growing afresh under the treatment shortly described in "Doings of the Last Week" a week ago. Much the same rule must be followed with Heaths, only not so much closeness and a moist atmosphere should be given them for fear of inducing the presence of mildew. All plants are the better of being kept a little closer—that is, with less air—after being potted; and, in addition to watering the roots, the top should frequently be syringed, and the leaves shaded from very bright sunshine, until the roots are working freely in the fresh soil.

Then, thirdly, as to the necessity for repotting every year. As a general rule, we may say that plants in small pots are the better for this repotting; but when the plants are in six or eight-inch pots they will often be better of going on a season or two without potting, and when they are in twelve-inch pots or larger they will be all the better for not being turned out for two or three years, if the drainage is right; but instead a little of the surface soil is removed with a small pointed stick, and fresh surfacings added, and with that, in the case of Azaleas, a small portion of very rotten old cowdung may be incorporated.

FLORISTS' FLOWERS AT THE CRYSTAL PALACE SHOW.—MAY 23RD.

NEVER did the beauties of the Crystal Palace, or the excellence of its Shows, appear to me in such strong relief as they did on Saturday last. It may have been that my recollections of the French "Exposition" were still in my mind and the grandeur of the display was by comparison more than ever manifested; or else that the Show was really finer than it has ever been, but certainly it would be impossible to exaggerate the excellence and high character of very nearly everything that was contributed to the floral display. A few youthful exhibitors (their youth applying only, so far as I know, to their exhibition years), did certainly bring some things which they had much better have left at home; but they were only slight blemishes in what was a most magnificent sight. All down that immense nave on either side rows of magnificent greenhouse plants, fragrant and curious Orchids, delicate Roses and dazzling Pelargoniums, displayed to thousands of admiring eyes their rare and singular beauties. All the classes were well represented, and in many the competition ran so close that it was with great difficulty the Judges were able to decide on their merits; while many new and curious plants attracted, as novelty ever does, many to behold and scrutinise their beauties. As others have entered upon the description of stove and greenhouse plants and fruits, I will endeavour to give an idea of the florists' flowers, whether in pots or as cut blooms, although I do not attempt the Azaleas, which in truth are as much a florists' flower as the Pelargoniums.

Roses in pots were not, I think, so fine as I have seen them, although some individual plants were magnificent. My own taste inclines to the smaller-sized plant rather than to those monstrously overgrown productions; but taking them as generally admired, nothing could possibly be finer than the plant of *Souvenir d'un Ami* and *Charles Lawson* in Messrs. Lane's collection, or the *Lælia* of Mr. Wm. Paul. So close was the contest here that the Judges placed the two collections as equal firsts. Messrs. Lane's plants were *Paul Perras*, *Comtesse Mole*, *Souvenir d'un Ami*, *Louise Peyronney*, *Baronne Prevost*, *Charles Lawson*, *La Reine*, *Lamarque* (not good), *Chénédoilé*, and *Paul Ricaut*. Mr. Paul's contained *Général Jacqueminot*, *Madame Willermoz*, *Louise Odier*, *Paul Ricaut*, *Souvenir d'un Ami*, *Souvenir de la Malmaison*, *Paul Perras*, *Lælia*, *Baronne Prevost*, and *Charles Lawson*. Messrs. Paul & Son were third with smaller plants, and *Paul Perras*, *Chénédoilé*, *Madame de St. Joseph*, *Juno*, *Souvenir d'un Ami*, *Coupe d'Hébé*, *Niphotos*, *Madame Boll*, *Charles Lawson*, and *Paul Ricaut*.

The Roses in eight-inch pots were in my estimation far prettier, and nothing could be better done than Mr. Turner's collection, which gained the first prize. It contained *Baronne Prevost*; *Madame Damazin*, *Tea*; *La Reine*; *Dr. Bretonneau*; *Madame Charles Wood*, a fine Rose; *Madame Boll*; *Madame Bravy*, *Tea*; *Modèle de Perfection*, quite a gem; *Catherine Guillot*; and *President*, *Tea*. Mr. Wm. Paul was second with *l'Elegante* (poor), *Triomphe de Paris*, *Baron Gonella*, *Madame Furtado*,

Buffon, *Senateur Vaisse* (good), *Alphonse Karr*, *Comtesse Orvaroff* (Tea), *Beauty of Waltham* (fine), and *Louis Guelina*. We thus find Mr. Turner comparatively a young grower, taking, as is his custom when he attempts anything, the first place.

I have never seen a closer run—a neck-in-neck race, in fact—than the contest in 10 Pelargoniums open to amateurs and growers. It was at last decided for Mr. Bailey, of *Shardeloc*, who won it with Mr. Marnock, *Monarch*, *Desdemona*, *Rose Celestial*, *Scarlet Floribunda*, *Sir C. Campbell*, *Sanspareil*, *Lady Canning*, *The Belle*, and *Ariel* (they were thus placed). Mr. Turner was second with *Beadsman*, *Rose Celestial*, *Desdemona*, *Bacchan*, *Fairest of the Fair*, *Empress Eugénie*, *Etna*, *Festus*, *Guillaume Severyns*, *Candidate*. Messrs. J. & J. Fraser were third with *Desdemona*, *Sanspareil*, *Governor-General*, *Rose Celestial*, *Fairest of the Fair*, Mr. Marnock, *Sir C. Campbell*, *The Bride*, *Candidate*, *Pizarro*. I have written them as they were staged, and it will be seen how effect has been arrived at by judicious arrangement. I rather fancied that in Mr. Turner's lot *Beadsman* and *Rose Celestial* were too close to one another, although one hardly dares to find fault with so excellent an arranger of colours as he is. It would be needless to point out excellencies where all were good, but we cannot forbear saying that the *Lady Canning* of Mr. Bailey was the best plant there, and a perfect gem. In the class for Amateurs Mr. Shrimpton, gardener to J. Smith, Esq., *Mickleham Hall*, was the only exhibitor. His plants were *Vestal*, *Governor-General*, *Rose Celestial*, *Sanspareil*, *Fairest of the Fair*, and *Peacock* (a very fine and striking plant).

Fancy Pelargoniums were also well shown, and in considerable numbers; Mr. Turner exhibiting two collections, one of which obtained first and the other second prize. His first collection contained *Clemanthe*, *Acme*, *Arabella Goddard*, *Lady Craven*, *Delicatum*, and *Roi des Fantaisies*. Messrs. Fraser were a good second with *Acme*, *Clara Novello*, *Cloth of Silver*, *Queen of the Valley*, and *Celestial*. Mr. Turner's smaller plants were *Queen of the Valley*, *Cloth of Silver*, *Ellen Beck* (a decided beat on *Celestial*), *Reliance*, *Undine* (very bright and beautiful), and *Modestum*. Mr. Bailey was fourth with *Acme*, *Rosabella*, *Lady of the Lake*, *Negro*, *Lady Craven*, and *Clara Novello*. There was a want of freshness here which militated against them, but the plants were good.

A good number of seedling Pelargoniums were exhibited, the most noticeable of which were *Diadem*, a very fine rosy purple, from Mr. Hoyle, a flower of great size and substance, and perfectly circular: this obtained first prize. The second was *Artist*, another fine flower of a warm rosy tint. *Alexandra* was third, a bright lively flower in the way of *Belle*, but better; *The Prince* fourth. These were all Mr. Hoyle's flowers. There were *Orion* also, a bright scarlet, *Eurydice*, *Cynosure*, *Pelides*, *Royal Bride*, &c.

I have never seen such fine plants of herbaceous Calceolarias as those exhibited by Mr. James, gardener to J. Watson, Esq., *Isleworth*. His collections were placed first and second; but I think it is a mistake not to define what the Calceolarias are to be, as shrubby and herbaceous were mixed together. His most noticeable plants were *Lord Clyde*, dark; *Macaroni*, dark red spotted; *Master Watson*, cherry crimson with spots; *Lord Elgin*; *Colonel Massy*; and *Mr. Davies*. Mr. Reid, gardener to J. N. Farquahson, Esq., *Sydenham*, was third; but his plants were mostly shabby, and were not sufficiently in bloom.

In CUT FLOWERS, Tulips must be placed first, although the day was somewhat late for them, and as a consequence some of the blooms were too fully expanded. This prevented Mr. Turner's stand from taking first place, to which it was otherwise entitled. As many as seven collections were staged; but some people have strange notions as to what are required for exhibition, for we saw a yellow self and various most foul cups in some of the stands. Mr. Hunt, of High Wycombe, took first prize with *Magnum Bonum*, *Anastasia*, *Maid of Orleans*, *Royal Sovereign*, *Gari-baldi* (seedling), seedling *Polyphemus*, *Gen. Baneveld*, *Madonna Storey's Queen*, *Duchess of Sutherland*, *Vivid*, *Romeo*, *Triomphe Royale*, *Victoria Regina*, *Duchess of Sutherland* (Gibbons), *Blomart*, *George Heywood* (a magnificent bloom), *Heroine*, *Pandora*, *Lady Downes*, and *Lord Denman*. Amongst Mr. Turner's were fine specimens of a bizarre seedling, a very noble flower, and *Duchess of Sutherland*, *Triomphe Royale*, *Duke of Clarence*, *Magnificent*, *Maid of Orleans*, and *Dr. Horner*.

"Well done, Warwickshire!" I may say as to *Verbenas*. *Bagby* and *Coventry* both show us that they can do something besides play football and make ribbons; for Mr. Treen and Mr. Perkins carry off the laurels here, being in fact the only exhibitors. Why

this should be, ye metropolitan growers ought to ask. But I believe it would require something to beat the stands exhibited that day. Mr. Treen, who took both first and second, had Magnificent, Foxhunter, Rugby Hero (a very fine flower), Snowflake, Géant des Batailles, Apollo, Firefly, Great Eastern, La Gloire, Mrs. Harrison, Nemesis, Decorator, Venus, Julie, Miss Field, Auricula, Lord Raglan, Mrs. Moore, Kate, Rainbow, Mrs. Pennington, Kenilworth, and Countess of Aylesford. Some of these were really splendid, and reflected great credit on the growers. Mr. Perkins had also some excellent blooms: amongst which I was glad to see that Lord Leigh maintained its position.

No less than thirteen stands of Pansies were set up, including several of Fancies from Messrs. Downie, Laird, & Laing. The first prize was obtained by them, and contained General Young, Attraction, Prince of Prussia (seedling, yellow ground), Mary Lamb, Francis Low, Jenny Lind, Lord Clyde, Mrs. Laird, Imperial Prince, Cupid, Countess of Rosslyn, Sir J. Graham, Lady Burn, Beauty, Thomas Martin, C. W. Ramsay, Mrs. Hopkins (very smooth), Eclat, Perfection, Alice Downie, and Masterpiece, very fine. Amongst Seedling Pansies were two curious Fancies—Mr. Nethercote, dark claret, edged with a light border all round; and Earl of Rosslyn, a curious dark clarety flower.

There were two collections of Cut Roses from Messrs. Paul and Son and Mr. Wm. Paul. Amongst the former I noticed La Boule d'Or, very good; Louise Chaix; François Lacharme, a splendid flower; Madame Furtado; Eugène Appert; Madame Charles Wood; Alphonse Damazin, very full; Souvenir de Comte Cavour; and a box of yellow Tea and Noisette, containing Louise de Savoie, Marquise de Foucault, Safrano, Solfatarre, Viscomtesse de Cazes, and Madame William. In Mr. W. Paul's collection I saw Monte Christo, Souvenir de Lady Eardly, both good; Beauty of Waltham, and Admiral Gravina, a dark and good flower.

I cannot pass by the nice strain of new Mimulus exhibited by Mr. Bull, nor the two fine Clematises of Mr. Standish, and the white Azalea, Louise Von Baden, of Mr. Turner.

I must now finish, as my space is fully occupied, but cannot do so without saying what indeed is unnecessary almost of the Palace, that everything was done to promote the comfort and pleasure of the exhibitors and visitors, and that Mr. Houghton may fairly be congratulated on the high position to which under his judicious and excellent management the Crystal Palace Flower Shows have attained.—D., Deal.

SHIFTING PLUM TREES WITH FRUIT ON THEM.

I HAVE some Plum trees in pots which promise to produce heavy crops this year. The pots the trees are in are rather small for them, and their foliage is very scant. My gardener proposes to shift them into larger pots now. Would this be proper treatment?—AN IRISH SUBSCRIBER.

[If the trees could be moved without at all disturbing the roots no harm to them would arise, but we do not think there is any necessity of running the risk. We should prefer removing the surface soil, and replacing it with well-decomposed stable-manure. This, combined with weak liquid manure, would sustain the growth of the trees as well as of the crop. Do not allow any tree to be overloaded; thin without mercy; and a good rule is, when you think you have thinned sufficiently, then to take off half of the fruit you have left. The vigour of the tree and the size and flavour of the fruit depend upon a judicious thinning of the crop.]

RHODODENDRONS.

I CONFESS entering on the subject of Rhododendrons more with a view to the encouragement of some other of your correspondents to record their opinions on the matter than with any expectation of throwing much light on their cultivation myself, for it is now some years since I was amongst them, where they might be said to be fairly at home. We have some here, and, in fact, most places of note have their Rhododendron-beds; yet it is only in places possessing a soil adapted to them that they grow with that freedom which indicates that they are quite at home.

Beds artificially made will afford for a time a certain amount

of success; but even then the plants seldom do so well as when the natural soil of the district suits them; and although I am far from assuming to myself the credit of being perfectly right in my views of their habits and requirements, I should say that a soil in which they will grow and prosper and perfect their seed, and where that seed sows itself and produces plants amongst the wild rubbish by which they are surrounded, is the soil adapted to the Rhododendron. But there is even great diversity in soils of this kind; and moisture, which exercises so powerful an influence on certain plants, either by contributing to their success or by causing their extinction, is certainly not the all-powerful agent here, for I have seen scores of acres of Rhododendrons occupying the crest and sides of a dry peaty hill with some stunted Birches overtopping them; while in another place the plant is seen occupying a wet springy dell, not a stagnant swamp, but receiving large quantities of spring water in its descent to the basin below. Colour and texture of the soil are likewise not much of a criterion, for on a dry hilly situation in the grounds at Linton Park, Rhododendrons flourish and ripen their seeds, and occasional plants are found a good distance off. Doubtless, there might be more, only the scythe is apt to destroy them. This soil is a sort of yellow friable loam, with at least three-fourths stones, with rock underneath—standing water at not less than 90 or 100 feet from the surface. I may add, that the kinds planted are common hardy ones, not all the old ponticum, but such as were esteemed useful and good some twenty-five years ago.

I will adduce another case. At Preston Hall, only a few miles from here, a rounded hill of dry sand, previously a coppice of Hazel, Birch, and other trees, apparently self-sown, was cleared, all but some large Scotch Fir trees, and a summer-house was erected on the summit. The space having been formed into a half-dressed pleasure-ground, with rockwork and other rustic appendages, Rhododendrons and similar plants were introduced on a large scale. The eastern side of the mound, or hill, for it was of considerable elevation, was planted some three or four years before the western side, the soil being a sort of pale yellow sand without a stone, and to all appearance all sides of the hill were alike; but, strange to say, the plants on the eastern side, though they grew vigorously and flowered well, did not perfect their seeds so as to produce young plants by self-sowing; while on the western side it is not too much to say these were growing by millions. Self-sown Groundsel on the best quarter of the kitchen garden could not have come up thicker; and when I saw them in the spring of the present year they were in a nice condition to transplant, having some half a dozen leaves each, and being sturdy and well rooted.

Now, the question arises, Why did not the eastern side of the hill produce plants as well as the west side, the soil being alike in both cases, and the varieties much the same? The attention or rather non-attention, for they did not require much care in the summer months, was the same in both places, and the plants, so far as related to their general healthiness and freedom in flowering, were also alike. Mr. Frost, the very able gardener there, was at a loss to account for the above circumstances. I might also add that Andromedas looked remarkably well, as likewise did some of the Azaleas. Kalmias were not so satisfactory. Amongst the Rhododendrons were many new and valuable kinds which promised to vie with the commoner ones in robustness and well-doing. I believe some peat was added to the natural soil, or sand for some of the choicer kinds; but it was evident such assistance was not wanted for the ordinary ones.

Taking a view of the same plant in other counties, I think the largest specimens I have ever seen were in Lancashire, where a rich, black, sandy soil, well adapted for all root crops, seemed also to suit the Rhododendron. In northern Cheshire the Rhododendron is likewise at home; while on the steep hill sides of some places in Staffordshire and Derbyshire, it is evidently harder than the common Laurel. At Alton Towers, I was told it sowed itself and reproduced a numerous offspring on a soil differing considerably from those I have previously described. At Chatsworth it is also extensively planted on soils and in positions differing widely from each other in character; but I had not an opportunity when there of observing all, and I have been told that there are stations in Wales where it thrives better than anywhere, but I am not acquainted with them. It seemed to thrive pretty well in Cornwall, though what I saw was not so good as I have seen in less favoured localities; Mr. Pooley, the gardener at Mount Edgecumbe, pointed out to me the positions in which it prospered, and those in which it would not do so in

their grounds, the line of demarcation being a perceptible change of soil, visible enough to the naked eye, and, doubtless, widely different in its chemical constituents. Some other places might be pointed out possessing similar features to the examples above cited, and many other instances of successful cultivation might be given, but it would be tedious to do so.

Those who wish to see a large number of Rhododendrons all in flower at one time ought to visit Cobham Hall, near Gravesend, where I believe Lord Darnley kindly permits the public on certain days to see them. I should think the mass of plants if collected would cover fifty acres or more. They occupy the crest and sides of some dry peaty hills, a few Birch and other trees being intermixed with them, and walks or drives running in various directions carry the visitor through a whole sea of flowers; while the wild beauty of the Foxglove profusely rising in all directions is scarcely less striking. Here it is needless to say that the Rhododendron sows and reproduces itself to any extent; and I believe the bulk of the plantation to have come from seed, a previous occupier of Cobham having planted the original in a soil in which they soon became naturalised, the result being a complete cover of them. Sites differing widely from this may occasionally be found where they do tolerably well. Even in clay they will grow, but are not at home; but I have seen them do tolerably on the edge of a peaty morass. The condition here that supported them against the undue moisture was the mineral qualities of the water, and not its superabundance.

The above examples of successful cultivation might be indefinitely extended, and the various nurseries where large quantities of plants are raised for sale might be named; but it is needless following the matter further than saying that most districts possess a spot suitable to the growth of this plant. The diversity of soil with which this country is favoured often exhibits strata of widely different kinds in close proximity to each other. I remember once noticing a black peaty morass, said to be 30 feet deep, over which a turnpike road was laid, which vibrated very considerably every time a load passed over it, and yet on the very edge of this morass was a freestone quarry some 60 feet or more high, and supposed to descend as deep as the morass, the soil on the top of the quarry being ordinary loam mixed with yellow sandstone shatter at the top. A peaty soil is also sometimes found near chalk, and it not unfrequently happens that the soil which overlies the chalk is of a kind not at all unsuitable to Rhododendrons where there is plenty of it; and where the wild Heath grows there will the Rhododendron grow also. It must be understood that every black morass is not a suitable place. I have seen plants killed by being planted in such a material, and that not on the spot where it was found; for the marshy peat was carried to a distance, and to a certain extent deprived of some of its grosser qualities by the drier position it was placed in, yet it contained sufficient poisonous matter to kill plants that had previously been in good health.

Some little judgment is, therefore, required in selecting a proper place and a proper soil for the Rhododendron to grow in; for, though it is often found alike doing well in a damp position and in a dry one, in a shaded place and an open one, and in fact under circumstances that appear widely opposed to each other, there seems to be no question but that certain soils furnish the food it requires in greater abundance than others, and it is yet doubtful whether the plant relishes such food in a liquid form, or contrives to absorb it from the dry soil that possesses it. Besides, our knowledge of the chemical constituents of soils is not yet sufficiently good to point out at once the kind of food that will most likely suit it, or, rather, we are not sufficiently versed in the science of making compounds of such materials as are always at hand as will approach nearest to the natural soil in which the plant prospers best.

Rhododendrons are, however, often found thriving tolerably well in the rich black soils that have been long in cultivation, and also such plants may be seen struggling with a tolerable share of success in a damp clay. But this is an exception; they are more likely to prosper on the steep declivities of a rocky glen overhung by trees and surrounded by the wild herbage common to such places. Many other places might be pointed out where they seem to flourish, but it is unnecessary to follow out this subject further. We will, therefore, take a glance at the places where they will not succeed unless favoured in some way by artificial means.

Dealers in Rhododendrons not unfrequently tell us that they may be made to grow anywhere. This is true enough, and so

might Rice, the Sugar Cane, and many other plants; but is it prudent to attempt to grow them everywhere? In the case of Rhododendrons extensive importations of a soil of a suitable kind will induce a growth more or less healthy, according to the allowance given to each plant, and also the character of the soil or subsoil with which it is in contact. To lay peat on chalk or calcareous limestone is placing two substances together, the amalgamation of which rarely produces a good mixture. I remember once seeing a large heap of mortar made of lime and sand in the usual way, but the sand contained some mineral quality at variance with the lime, which, after lying about a year, and as the heap happened not to be wanted, completely destroyed the lime, or, as the labourer said, the sand had eaten the lime completely up. Now, lime or chalk will do the same with peat. Chalky situations are, therefore, seldom adapted to the Rhododendron, unless the surface soil be of the kind described above, producing the wild Heath naturally. Some sands impregnated with mineral matters of certain kinds are also unfit; and the same may be said of gravels, although some of the latter are amongst the best soils occasionally.

So difficult is it to describe what kinds of soil will do by any written description, and giving chemical analyses is of no use whatever to guide the judgment unless the soil to be decided on be subjected to a similar test, that I fear it is only by studying the herbage that a knowledge of the soil can be gained, and even this is not at all times to be depended on. It has been already stated that the wild Heath betokens a soil adapted to the Rhododendron, and the same may be said of Furze in many instances, but not in all. The wild Sorrel is often found in such soils. The Whortleberry also is often an accompaniment there, and Foxgloves likewise abound; but their robustness enables them to live in other places as well, so that without further proof their presence must not be taken as worth much. The same may be said of the Yew, which, though often found wild on heathy moors or woods, is quite as often found on chalky downs also, as is likewise the Juniper. Generally the Rhododendron and Birch thrive together. Where, therefore, the latter is found wild, the former may be planted. Several Ferns betoken a soil and situation suitable to the plant, and the presence of the little Stonecrop (*Sedum acre*) may also be regarded as indicating a medium, though not, perhaps, a situation suitable to the Rhododendron. Some other plants might be given as examples; but they are not always to be depended on, and are often found in situations of an opposite kind. I may as well, perhaps, say that such plants as Wild Thyme, Saintfoin, and several Vetches are often found on soils the very opposite to that wanted for the Rhododendron.

Of the various mixtures necessary to form a compound in which this plant will thrive tolerably well—I will not say particularly well—much might be said; and there is, perhaps, nothing in the gardening world as to which greater diversity of opinion exists. Unquestionably, dry peat cut with the Heath and other herbage on it, only a few inches thick and laid up just long enough to kill the herbage, is the best; but where this article has to be sought for some twenty miles or more, it cannot be used to the extent it would be if more plentiful; and though the best class of plants may be treated with it, it may be necessary to leave the less favoured ones to make shift with something else. The following mixture has been made use of here for some beds of Rhododendrons with a fair share of success, about a barrowload or less being used around each plant, all of which were small. It consists of such materials as are mostly to be had everywhere. In a timber yard large quantities of old bark, sawdust much decayed, and small chips in a similar stage of decay, were mixed with about an equal quantity of leaf mould well rotted. To this was added all the refuse of the potting-bench, omitting, of course, all sticky matter, but retaining all the sand and sandy soil and peat. With this were mixed several loads of white sand, such as was used for striking cuttings in and to mix with potting soils, and which I felt sure possessed no mineral matters hurtful to vegetable life. This mixture was well amalgamated, and turned several times and exposed as much as possible to the air before being used. Some hundreds of plants were planted in it, and so far they appear successful. The natural soil of the place was of various descriptions, some being a rather stiff loam, and some much less so, and what farmers would call good land. I will, however, at a future day report more on this. In all cases the planting of Rhododendrons on soils not adapted to them should not be done without some assistance in the way described: and amongst the many in-

redients to be had in most places, I would place sand as one of the most useful, especially such as is free of all noxious mineral matters, not, for instance, the green sand of West Devon and Cornwall, which is of so poisonous a nature as to kill vegetation. I think it contains copperas; but as all mineral poisons are bad, the sands in which these exist must be avoided. Generally river sand is good—not, of course, such as is within reach of the tide, but plain washed sand.

Of the situation for Rhododendrons it is hardly necessary to speak, as they are found doing well in full sunshine and in shade, on the highest hill and deepest valley, and on hill sides of all aspects, the hardest frost rarely injuring them; but a hot summer will affect them much if the soil be not one exactly adapted to their wants. They will, nevertheless, struggle for an existence amongst the rankest herbage, and contend against the roots of most trees that may claim a common share of the ground. In general, however, Elm-tree roots are the most hurtful to them; but it is more beneficial to have some slight covering to the ground than to let it be quite naked. When the latter is to be the case, to shade the ground from the sun, some artificial substance, such as leafy matter or short grass, moss, or litter of any kind may be used; for the small fibrous roots ramifying near the surface do not like to be scorched up with every blink of sunshine. Shading is better than watering, although the latter may be done also if it appears absolutely necessary.

To those about planting Rhododendrons in places not naturally adapted to them, and who do not intend treating them to wagonloads of their favourite peat, I would say, Obtain your plants from some nursery not possessing the soil best adapted to their vigorous growth; for by removing strong, luxuriant-growing plants from a situation of the very best kind to one of a medium or indifferent kind a check is given, and not unfrequently sickness follows. It is better, therefore, where other things favour doing so, to transfer plants from a poor place to a better one. Such as have been frequently moved and are, in a certain sense, naturalised to the second-class character of the soil they are to occupy, are more likely to do well there than those which are all at once transported from the best position to an inferior one.

On the many accompaniments to the Rhododendron-bed, it is needless to enter. Some growers advocate the vacant ground to be covered with Ivy, but this plant speedily outgrows and overpowers its legitimate neighbour. The variegated Vinca is better, and, perhaps, some summer annuals are better than either, as the Vinca gets strong. Whatever may be used, on no account allow the young growths of the Rhododendron to be meddled with, but rather confine the occupation of the ground to litter, moss, or short grass; and if the small birds do delight in scratching amongst such things and carrying part away, still there is plenty left to serve the purpose of a screen. On no account allow any digging or disturbing of the ground amongst old-established plants. If a little fresh surface be wanted, add some fresh material, for Rhododendrons will struggle better against the wildest herbage than against the cruel amputations of the spade. These matters and others of a like kind have, however, been frequently alluded to before in the columns of this paper.—J. R.

ROYAL HORTICULTURAL SOCIETY.

MAY 27.

FLORAL COMMITTEE.—On Wednesday the 27th, at the first great Exhibition of the Royal Horticultural Society, held at the Gardens, South Kensington, a Sub-Committee was appointed to report on such new plants and florists' flowers which were sent for examination. With the exception of the seedling Pelargoniums from Mr. Turner, Slough, and two new and beautiful Orchids from Messrs. Veitch, Chelsea, and Messrs. Low, Clapton, there were but few remarkable flowers, and, consequently, the certificates awarded were limited.

Among the plants, Mr. Standish sent a new and delicate white Weigela, which received a label of commendation; Acer sp., from Japan, with broad-lobed foliage, variegated with white spots and blotches—third-class certificate.

Messrs. Veitch exhibited *Dracophyllum* sp.—second-class certificate; *Eranthemum* sp., a dwarf trailing plant with handsome red-veined foliage, exhibited under a glass shade—second-class certificate; *Abies firma*, a handsome species of this tribe—first-class certificate; *Phalænopsis Lobbii*, a white flower with purplish

lip, but not equal to other varieties—second-class certificate; *Spiræa* sp., of dwarf habit with small rosy flowers, a very compact-growing plant—second-class certificate.

Messrs. Low, Clapton, exhibited *Dendrobium Parishii*, a small but very beautiful and interesting Orchid with purplish flowers, which was much admired—first-class certificate.

Mr. Williams, Holloway, sent an interesting variety of *Lastrea oreopteris*, with tasselled fronds—label of commendation.

Mr. Bull, Chelsea, exhibited *Areca dealbata*, a handsome plant with palm-like foliage—second-class certificate; *Caladium Lowii*—first-class certificate; *Pandanus elegantissimus*—second-class certificate; *Euonymus ovatus variegatus*—label of commendation; *Petunia Vernon*, one of the dark-veined varieties, very showy—label of commendation.

Mr. Ivery sent another of his numerous varieties of *Athyrium* named *Applebyanum*—label of commendation. Mr. Young, *Pandanus elegantissimus*—second-class certificate. M. Verschaffelt, Dieffenbachia *Verschaffeltii*, which received a label of commendation.

Mr. Turner, Slough, sent several seedling Pelargoniums. *Diadem* (Mr. Hoyle), a remarkably showy variety, perfect in form and new in colour, the back petals deep maroon margined with bright purplish-rose, pure white throat, lower petals banded with bright purplish-rose. This was decidedly the flower of the day, and was awarded a first-class certificate. *Pelargonium Artist* (Mr. Hoyle), a flower of the same good character as *Diadem*—back petals deep maroon margined with light rose, pure white throat, lower petals with a broad band of light rose; a striking variety, and remarkable for its softness and delicacy of colouring—first-class certificate. *Pelargonium Prince* (Mr. Hoyle), dark maroon upper petals, pure white throat, lower petals vivid, shaded scarlet—label of commendation. *Pelargonium Penelope* (Mr. Hoyle), a conspicuous flower, with dark back petals, clear white centre, lower petals shaded with rose, deeply blotched—label of commendation. *Pelargonium Prince of Wales* (Mr. Beck), upper petals deeply shaded with light rose margin, clear white centre, lower petals rosy carmine; a very pleasing variety—label of commendation. Mr. Turner exhibited many other seedlings of considerable merit, but too closely resembling other named varieties to receive special notice. Many other specimens were exhibited.

Mr. Standish again exhibited his Japan Clematises. The large double-flowering one now named *Fortunei* had eight or ten fine blossoms expanded. The purple single variety, *Standishii*, still maintains its character.

Mr. Bull sent a showy collection of *Pelargonium Zonale*; also a collection of *Petunias*, single and double. These plants were arranged in large baskets, and produced a pleasing effect. Mr. Bull exhibited other varieties of his hybrid *Mimulus*, which we have previously noticed. Seedling hybrids of the same *Mimulus* were also sent by Messrs. Henderson, Wellington Road; also a dwarf variegated *Pelargonium* of the scented-leaved family suitable for edgings. From Mr. Turner came a seedling *Verbena*; and from Mr. Laing, seedling *Pansies*. Many other specimens were sent of considerable interest, but too numerous to be noticed in this report.

Collections of newly-introduced plants that have received special recognition from the Floral Committee, 1860, 1861, 1862, were sent, and received certificates, thus proving the utility of this Committee. It was remarked by an old exhibitor, that out of the numerous plants and flowers placed before the Floral Committee, not one in twenty had failed in maintaining the character and merit assigned to it at these meetings, which is a strong guarantee for the public that the decision arrived at is generally correct, however inclined some persons may be to find fault.

FRUIT COMMITTEE.—In the department that pertains more particularly to the Fruit Committee, there were several exhibitions, the exhibitors evidently mistaking the work which is undertaken by the Committee on these occasions. It should be understood, that on the great shows and special general meetings, the only subjects that are expected to be submitted for the opinion of the Committee are only seedling or other new varieties of fruits and vegetables, and not such as come under no class in the Exhibition. Thus one sent a collection of six dishes of Apples, and labelled them "exhibited for the prize," when no prize was offered. Another sent a collection of vegetables which in early spring would have been reckoned meritorious, but which in the end of May did not possess any attractions.

The only two subjects that properly came under the notice of

the Committee were a seedling Strawberry from Mr. Turner, of Slough, called President; and a seedling Pine Apple from Mr. Stevenson, gardener to the Earl of Durham, Lambton Castle. The Strawberry President promises to be a variety of first-rate excellence; for although the fruit was, as a matter of course, at this season produced from forced plants, the flavour was so good as to warrant the belief that it will later in the season, and when produced from the open ground, be very much better. The fruit is large, varying from conical to cockscomb-shaped, and considerably furrowed. The skin is scarlet. When well grown we conceive it will be little if at all inferior in appearance to Sir Charles Napier, while the flavour is infinitely superior. The flesh is firm with a rich pine flavour, and with a pleasant briskness. Later in the season we hope to hear greater things of it.

The seedling Pine Apple of Mr. Stevenson is a very tall, conical-shaped fruit, of the colour and with the pip of the Montserrat, from which it was raised. Judging from the specimen exhibited, the shape is undesirable, from being so long and small. The flesh is not so solid as it might be, but is tender and though of excellent flavour is not superior to either the Queen or Montserrat. Mr. Stevenson, we believe, has still a large number of seedlings which we hope some day to see, and which we trust will prove of superior qualifications.

Mr. Challis, gardener to Lady Herbert, Wilton House, Salisbury, sent eight or ten fruit of a handsome-looking round-netted green Melon, which were all grown on the same plant, and hence called "Prolific;" but whether from the great crop or from the fruit being too long cut, it was deficient in flavour. It has all the properties of an excellent Melon, provided that particular point can be improved.

Mr. James Taylor, Hickleton, near Doncaster, sent a dish of good Figs; a large, oval, cream-coloured Melon, which was not in condition; and a brace of fine Cucumbers.

Mr. Drummond, gardener to Mrs. Allnutt, Clapham Common, sent a splendid basket of Mushrooms that elicited considerable notice.

Mr. Mobbs, gardener to W. B. P. Tyringham, Esq., Newport Pagnell, sent fruit of the seedling Apples exhibited at the last Meeting of the Committee; and Mr. Taylor, Temple Newsham, Leeds, sent two smooth-leaved Cayenne and one Black Prince Pines.

Mr. Barnwell, gardener to H. Mills, Esq., Bisterne Park, Ringwood, sent a collection of vegetables, and excellent dishes of Oscar and Keens' Seedling Strawberries, besides a collection of vegetables.

THE CONTROVERSY ON HEATING GLASS STRUCTURES.

I HAVE to thank Mr. Major, of Cromwell House, for his communication on the subject of heating hothouses described at page 330, as well as for his kind invitation to show me the mode in which it is done. I also beg to thank some other gentlemen for their communications on the same subject—even those who differ from me are equally entitled to my thanks, and I should have acknowledged their courtesies before but from unavoidable circumstances.

I am glad to see that a correspondent whose communication I quoted when I last wrote on the subject of "Hot Water *versus* Flues (or *vice versa*)," has replied to some queries made by Mr. Thomson on the cost of the flue, and the straightforward way in which he has done so leaves nothing for me to explain on the subject.

One thing, however, I would advocate in heating matters—whether by the flue or by hot water, it is best to have the job well done. I do not by that mean to recommend extravagant and costly workmanship, but simply work well and efficiently completed.

I have in a former chapter stated my views on the matter of heating, and need hardly repeat that when one house only is to be warmed—say sufficiently to keep out frost and maintain a temperature of 40°—it will, in most cases, be most economical to put up an ordinary flue; but when there is a series of houses to be heated, and in some of them a minimum of 60° is to be maintained, it is better in this case to adopt hot water. Mr. Thomson, however, has shown that the latter is not so expensive an affair, while "E." has shown that flue-heating is still much less. Without going into details, I expect that most parties who have

put up glass houses will have found the heating affair a much more expensive one than is shown in either of the communications. I have no doubt but both estimates are correct, but they may, nevertheless, be both below the actual cost of what other structures similarly planned were heated for.

Mr. Thomson assuredly must be wrong in affirming that hot-water pipes can be erected as cheaply as a flue; for one-half the expense of the latter must be included in that of hot water. The furnace-bars, door, and framework, as well as register-door and the chimney, must be the same in both, or, perhaps, the hot-water apparatus will require a somewhat more expensive one. Now, the remaining portion of the flue cannot assuredly cost so much as a boiler and the necessary quantity of piping.

I am sorry I cannot give the exact items of expenditure in an efficient hot-water apparatus; but I know of an instance in which upwards of £60 was paid for the apparatus required for heating a Pine-pit 85 feet long and 12 feet broad, and this sum did not include any part of the brickwork, or excavation, &c., for the fire-place.

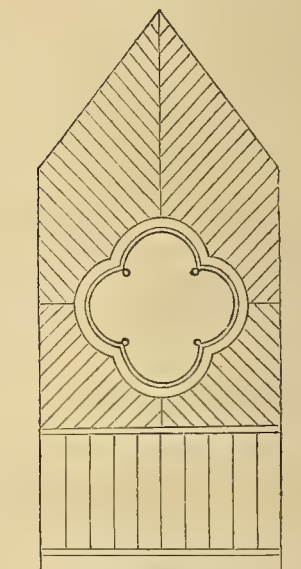
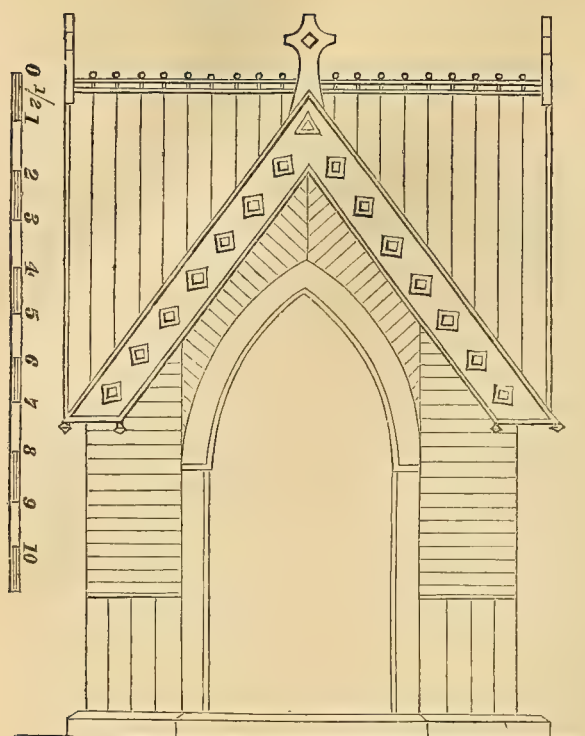
Now, compare this with a flue-heated greenhouse here, in which the smoke travels along cement pipes of 12 inches diameter, and which have done duty for five years without any cleaning whatever. The cost of the pipes at first was 1s. 1d. per foot for Roman cement ones; and, I believe, 1s. 6d. per foot run for those of Portland cement, and they, being in thirty-inch lengths fitting together with very little trouble, merely rested on small brick foundations of 4½-inch work at the joints, the pipes being just clear of the ground. A brick flue was used at the corners, but it is likely that corner-pipes could be had; but the advantages of a brick flue at the corners enable the flue to be swept when necessary by merely removing the covering-tile. I leave others to calculate the respective cost of the two modes.

I have no doubt the boiler of Mr. Major is a good one, but I do not exactly understand its construction. I have seen a sort of a cylinder boiler standing alone without any connection with brickwork, excepting that an iron chimney from it led into a brick one on the wall. I believe this did its work pretty well; but as the boiler was in a back shed, it did as much towards heating that shed as it did in heating the glass house it was intended to do. I find, however, I must reserve my further notices on heating until another opportunity.—J. ROBSON.

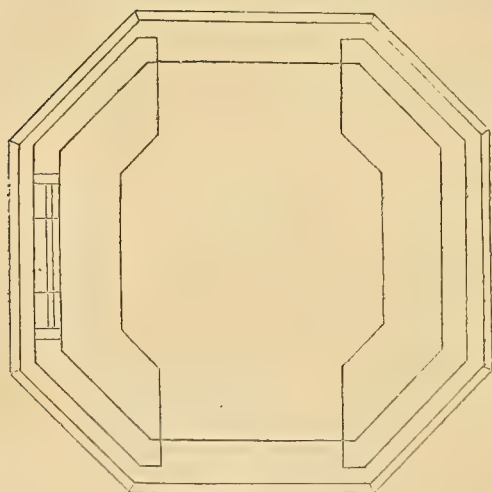
GREENHOUSE GARDENING IN A SMOKY ATMOSPHERE.

A Subscriber will feel much obliged for the names of any plants whereby she may insure good flowers throughout the winter in a lean-to greenhouse, S.W. aspect, 27 feet long and 10 feet wide, heated by a flue. There are six good Vines in it, which are considered secondary to flowers. No man or boy is kept, but a man from a nursery helps occasionally. The lady is her own gardener, and has derived all her knowledge, which is very limited as yet, from that valuable work THE COTTAGE GARDENER, the rules in which she follows strictly, but the flowers are small and poor compared to those she desires to have. There is no power of placing the plants out of doors, although surrounded by a large garden of grass and evergreens, for copper, patent fuel, and brick smokes constantly prevail. She has good composts for the plants, and uses guano and water with great care twice a-week. The plants already in the greenhouse are—Geraniums, Fuchsias, Cacti, Crassulas, Acacias, Heaths, Azaleas, Roses (Moss), Calceolarias, Cinerarias, Heliotrope (large tree). Passion-Flower covers one side.

[It is against you not being able to put some of your plants out in summer. We would recommend six of the hardiest Camellias, including the double white; six Epacris, of various colours; two Coronilla glauca; two Cytisus racemosus; and two Cytisus Atkinsonii, a dwarf yellow; Cinerarias from seeds sown now, or slips or divisions in a week or two; four Salvia fulgens, well stopped until the end of August, and with plenty of pot-room; and the same of Salvia gesneriflora, not so much stopped; and two or three plants of Fuchsia serratifolia; and the same of Daphne indica and indica rubra, with Hyacinths, Tulips, Narcissus, Crocuses, &c., potted as early as you can get them, and these might be forwarded by being kept in a warm cupboard in the kitchen until well rooted.]



End View.



Ground Plan.

SUMMER-HOUSE.

THE summer-house here shown is from a design furnished by Mr. J. W. Chapman, of Richmond, Surrey, and is now being erected at "Heathlands," an estate of Amos J. Gann, Esq., Wokingham, Berks. It is placed at a point where a straight walk in the pleasure-ground terminates. Passing through the summer-house a curved walk commences, which is conducted round the whole park. There are some plantations of choice evergreens, &c., near the summer-house, which make a foreground to the views which are obtained from this point in three different directions. The summer-house is intended to be built of larch wood stained; and the tiles for the roof will be the small flat kind, of a dark brown-red colour.

MERITS OF ORCHARD-HOUSES.

I HAVE read with surprise the controversy which has been lately going on in THE JOURNAL OF HORTICULTURE respecting the merits of orchard-houses because, from my experience, I cannot understand how there can be two opinions on the subject.

In the year 1858 I built a lean-to orchard-house 17 yards by 4, and filled it with Peach, Nectarine, Apricot, and Plum trees, supplied by Messrs. Lane. This house answered so well that the next year I added to it another house 20 yards by 4. This second house was so entirely satisfactory that last year I increased its length by 12 yards. Some of my trees are in boxes, some in large pots, and others are planted in the open border. All seem to flourish equally well, bearing every year large and

excellent crops, with the single exception of the Apricots. One year I had an immense crop of Apricots, but generally they are few and far between.

In the year 1856 Messrs. Lane sent me twenty-five pyramid and bush Plum trees for planting in the open air. I gave them the best situation I could select, and certainly they have had all the attention they had the right to expect; but from the day they were planted up to the present time I have not gathered three dozen Plums from the whole lot. Three years ago I moved one of these Plum trees (a Jefferson) into the orchard-house, planting it in the border, and at once it took to bearing abundantly.

Some years back I laid out a considerable sum of money on

brick walls, and no doubt these walls answer well for Pears; but if I had my work to do again, the money which I spent on brick and mortar would be laid out on glass.

I have asked my gardener to put down on paper how he manages the orchard-houses, and I enclose his statement. At the present time all my orchard-house trees are loaded with fruit—Apricots only excepted. In my judgment the only way to secure a crop of Apricots in these northern parts is to have a heated wall, and this I believe to be a certain way.

I have hot-water pipes in the orchard-houses, but these are only used to guard against frost, and sometimes to ripen the wood in the autumn.—W. H., *North Lancashire*.

[The writer of the foregoing is a clergyman of high character, and the notes of his gardener are the following:—

"The trees are repotted immediately after the fruit is gathered, when all the soil is taken from the top of the pots and from the sides as deep as can well be got. The pots are then filled in with two-thirds of good soil and one-third of rotten manure, which is generally taken from an old Mushroom-bed. The soil is well beaten into the pots, and one good watering is given. Nothing more is required during winter, unless the wood seems to shrivel, when a little water is given. In the spring the trees are dressed with sulphur, soft soap, and clay, and the syringe is used twice a-day a short time before the buds begin to break. The syringe is not used during blooming. Just before the trees bloom the house is fumigated with tobacco-paper (and if it is fumigated twice, all the better), in order to keep the aphid away. Watering is a most important matter at the time of blooming. Water should be given rather sparingly; for if the soil becomes saturated with wet, the buds are sure to fall. The roots are confined to the pots; and after the fruit is set one heavy top-dressing of good rotten manure is given. If the green fly appears, the house must be fumigated without the loss of a day."]

MUSA CAVENDISHII.

THERE are certainly few more really noble occupants of the stove than a good plant of the *Musa Cavendishii*. There are others of the genus of much larger growth; but taking fruit-bearing qualities and other points into consideration, this is evidently the best for general purposes, and it produces as large an amount of fruit as any plant I know of that occupies the same space.

A bunch of fruit ripened here during the past winter which weighed on the whole 27 lbs. 8 ozs. avoirdupois, and consisted of 136 fruits, which, with the exception of one or two, were fully ripened and perfect. The barren end of the spike was cut off long before the fruit attained maturity, and, consequently, was not included in the weight named above.

The plant grew in a small corner of the plant-stove, which is much too low for it, all its leaves being broken at half their length. At the time the fruit was ripe the plant was about eighteen months old, it being a sucker from a plant that ripened fruit in the summer of 1861. In fact, the predecessor of the plant has occupied the same place with very little renovation of the soil for several years.

Perhaps some of your readers will record the weight and number of fruits that have been ripened elsewhere, as the above may have been exceeded.

I may add that, although the fruit ripened in February and early part of March, the flavour was good, and those who admire it consider it as good as any ripened in summer. This certainly is not the case with other fruits, and, of course, forms a recommendation of some consequence to this.—J. ROBSON, *Linton Park*.

TETRATHECA ERICÆFOLIA.

(HEATH-LEAVED TETRATHECA.)

Nat. ord., Tremandraceæ. *Linn.*, Octandria Monogynia. In 1805, Mr. Rudge published in the "Linnæan Transactions" a description, with drawings, of seven New Holland plants, among them is *Tetratheca ericæfolia*. Before that description was published in 1807, Sir J. E. Smith had described and portrayed the same species in his "Exotic Botany," t. 20. The specimens in both instances had been brought from the neighbourhood of Port Jackson.

Living plants of this greenhouse shrub were originally introduced in 1820, but long since lost, and it was reintroduced by

the agency of Mr. Drummond, in 1852. It is an evergreen subshrub, with erect branches, bearing linear heath-like leaves, which, on the more perfectly developed portions of the plant grow five or six in a whorl, but are sometimes scattered; they are revolute, with scabrous margins. From the axils of the leaves towards the end of the branches the nodding flowers are produced, so as



to form leafy spikes of blossom; they consist of a calyx of four ovate acutish sepals, and a corolla of an equal number of oblong, obtuse, pinkish-lilac petals; the anthers are dark-coloured, tipped with yellow, and open by a tubular orifice at the apex. The flowers have a very agreeable scent, resembling that of *Cyclamen persicum*; and, altogether, this is a greenhouse shrub deserving of extensive culture.

SOWING SOME PERENNIAL-FLOWERS' SEEDS.

A CORRESPONDENT asks us to state when the seeds of the plants named below should be sown, in order to have strong plants for bedding-out next summer—viz., *Heliotropes*, *Tropæolum*, *Gazania*, *Lobelia*, *Petunia*, *Cerastium tomentosum*, *Phlox*, *Cuphea*, *Gnaphalium*, *Mentha variegata*, *Perilla*, *Stachys lanata*, *Arctotis grandiflora*, and *Centaurea argentea*.

Commencing with the first of them, we may say, Sow the *Heliotrope* at once; and when cuttings can be had from the plants, propagate from the seedlings, as cutting plants flower better than seedlings. Sow *Gazania*, *Lobelia*, *Petunia*, *Cerastium*, *Phlox Drummondii*, and *Cuphea*, in a hotbed as early in the spring as you can—say by the middle of February, and encourage their growth by pricking out the young plants early into pans, and subsequently into separate pots if you have room for them. The *Tropæolum* and *Perilla* need not be sown so early—say by the end of May, as they grow quicker; and if you could winter an old plant of *Gnaphalium lanatum* you might obtain any number of cuttings in the spring, and they grow fast enough. A few old plants of *Mint* are also better than seeds, as the latter

may perhaps come up plain green. *Arctotis grandiflora* may be sown at the same time as *Gazania*, to which it bears some resemblance. The *Centaurea argentea*, or *C. candidissima*, might be sown at once, as the plants by being kept in pots do not grow fast; and, if they do so, cuttings from them will be useful. If you have not the convenience of a hotbed in which to forward the above plants next spring, but have a cool greenhouse or some pit where they can be secured from frost, it would be better to take cuttings of all of the kinds in August, and keep them in store-pots until March or April, when they may be potted-off, and will make good plants before planting-out time.—J. R.

GROWING MUSHROOMS IN POTS.

My experience in this mode of culture is by no means extensive, having only tried the system once, and that several years since. It proved perfectly successful; and some of your readers may feel inclined to ask this question—viz., Why not continue to practise it? My answer is simply the same as with regard to fruit. They can be obtained equally good, and with less trouble grown in beds in the usual way.

But for the benefit of any of your readers who may feel interested in the subject, I will detail my practice as correctly as I can. Early in the month of November, some years since, I found that it was desirable that I should produce Mushrooms as soon as possible. I had an excellent Mushroom-house under my care, but I had not a sufficiency of the material to make a bed—viz., horse-droppings. I, however, made a slight hotbed in the Mushroom-house, composed of half-rotten leaves, sweepings of lawns, &c.; and at the same time I carefully collected what droppings I could, so that by the time that the temperature of the hotbed had declined to about 80°, I had enough of droppings to fill three or four dozen nine-inch pots to within an inch of the top. These pots I at once plunged nearly to the rim in the hotbed; and when I found that the material inside the pots maintained a temperature of about 75° or 80, I inserted a piece of spawn as large as a hen's egg in the centre of each pot, making all very firm, and covering the surface of the pots with about an inch of stiff soil made quite damp. No water was ever given. In about three weeks the temperature of the hotbed had somewhat declined; the pots were then removed, a little fermenting material added to the bed, turning it at the same time, and immediately replunging the pots.

The temperature of the bed was never allowed to fall lower than 75°; and in rather less than six weeks from the day the pots were spawned, the surface of every pot was covered with small Mushrooms, which rapidly increased in size. As the atmospheric temperature of the house was kept to about 60°, on account of Sea-kale, Rhubarb, &c., being also forced there at the same time, this temperature brought the Mushrooms on faster than they were required. So they (the pots), were removed into a cool, dark, root-cellar, where they continued to produce excellent Mushrooms for some considerable time; in fact until a subsequently-formed bed could keep up the necessary supply—G.

HEATING GARDEN STRUCTURES.

THERE are few subjects of greater importance to the gardener than the proper erection of those edifices known as stoves and greenhouses.

Site or aspect is the first consideration. A site overshadowed by trees is unsuitable for fruits, though it may do very well for plants that delight in shade; yet even open sites are not always the best for the erection of houses for the successful cultivation of fruits. A site may be open but still bleak, and that materially affects the heating of the house and the giving of air. A sheltered situation is an essential in a climate like ours, and has more to do with the economical heating of houses than is generally imagined.

Suppose a house to be erected in a bleak place without shelter of any kind, and another to be put up in a sheltered situation. They are both heated alike, but the fire of one has to be kept going on a cold windy but sunny day, whilst that in the sheltered situation is warm enough without the application of fire heat. The one has the cold air driven against its sides, cooling the internal atmosphere faster than the sun's rays can heat it; but from the other, sheltered from the wind, little heat is abstracted by the air.

Yet a house may be cold irrespective of site. A house in a sheltered place with the laps of the glass open will be as cold as a house in a bleak situation with the laps putted-up. Then a lean-to house requires less heating than a span-roofed one. There is a loss in the latter of nearly one half of the sun's rays by reflection by the construction of the roof alone, to say nothing of its presenting a larger amount of surface to the cooling action of the surrounding atmosphere. A lean-to at an angle of 45° loses little from reflection in summer, but in winter nearly half the sun's rays are reflected: consequently a lean-to covering 300 square feet enclosing 2400 cubic feet of air requiring the temperature to be kept at 60°, will require 80 feet of four-inch hot-water pipe at a temperature of 212°; but a span-roofed house enclosing the same amount of air will require 60 feet more to obtain the same result.

I am not speaking of lean-to's and spans in their relative situations as regards light; I do not wish to maintain that lean-to houses are more suited to vegetation than a span-roofed, but to show that a quantity of enclosed air is more rapidly heated and more economically in the former than in the latter.

The size of the house also has a good deal to do with the heating. A small house proportionately requires more heated surface to heat it than a larger. The former presents a correspondingly greater amount of radiating surface to the surrounding air than the latter, and, as is well known, becomes sooner cold. A house 50 feet long by 20 will require 280 feet of four-inch pipe to maintain a temperature of 60°, and a house of the same length, but only 12 feet wide, will require the same amount of piping. The space in the latter will certainly be heated sooner to a given temperature than the larger house; but it will lose more by radiation and be cooled, in the same manner as it became warm, more quickly than the large house.

The heating of houses is also affected by moisture. Very moist atmospheres require a larger amount of heated surface to secure the same temperature in them than those several degrees drier. Our ferneries and Orchid-houses afford examples of this. I have noticed that a house in which a hygrometer denoted 95° of moisture (Saturation = 100) took nearly half a-day (5h. 45m.) longer to secure a temperature of 85° than a house with the same amount of heating surface where a hygrometer indicated 67° of moisture; and in cooling down the moist atmosphere was 4h. 57m. longer than the dry atmosphere.

Another point of no small import in the heating of houses is ventilation. It is necessary to provide for the admission of fresh air and the egress of foul. Stagnant air is inimical to healthy development in vegetation, and as the admission of fresh air is calculated to lower the internal temperature, provision must be made to prevent its doing so. The presence of the sun is the old-fashioned signal to give air; but as the sky is liable to be overcast for weeks, the atmosphere of our houses must be stagnant enough if no air be given during the sun's absence. It is not false economy to provide for a change of atmosphere at least once in twenty-four hours under all circumstances of cold and wet; and it is also necessary to provide for a fluctuation of temperature, or a rise of 10° or more above the calculated amount of temperature the heating apparatus is expected to secure.

Ventilation when it lowers the temperature denotes a badly-constructed heating apparatus. Many gardeners are prevented giving air through the deficiency in the apparatus, which may be theoretically properly constructed, and calculated to serve the purpose for which it was intended; but from the builder's ignorance of the smaller matters we have pointed out he makes a sorry affair of an otherwise good one, and often throws the plants into diseases which are attributed to the gardener. A few additional feet of heating surface is a good excess; in fact, a necessary help to successfully grappling with the vicissitudes of a fickle climate. There are only three ways of heating houses: by fermentation, hot water, and hot air. The first is spontaneous, therefore more suited to vegetation than any other heat (solar heat excepted). It is easy of application, and satisfactory in its effects; but its utility is materially impaired by the frequency of the necessity to renew it and the constant care necessary to secure the proper heat. Formerly dung was pre-eminently the best material for hot-beds, and it is now the best—at least, the most conducive to vigorous growth—for forwarding and maturing the fruits of plants of short duration. It has also the advantage of maintaining a steady bottom heat; but it cannot be made to raise the internal temperature 10°, without solar heat, in a few hours, on the occurrence of a very frosty night, neither is it easy to

cover up a large forcing-house with protecting materials to prevent the inmates from being chilled. The trouble in renewing, and the limited supply of dung at command, have done much to cause cultivators to look out for something more lasting, and as near resembling a natural system of heating as possible. Still all our aged practitioners insist on there being nothing like a bed of fermenting materials to give plants a start, by promoting root-action before leaf-development commences.

Dr. Haley, of Edinburgh, published a treatise on heating hotbeds by the steam of hot water about 1750, which was translated into French and again translated into English, appearing in the "London Magazine" for 1755 as a new plan for heating hotbeds, with a foreign signature attached to it. The system consisted of a boiler to generate steam, and stone pipes with uncemented joints heated the bed. It would appear from this that the chief aim of cultivators of that date was their desire to produce an apparatus that would give the results of a hotbed in perpetuity without any of the trouble and inconveniences of a bed heated by fermenting materials. Steam, however, was a very unmanageable agent, and though some people did very well with it, yet others barely got their plants into a fair way, and were just beginning to understand the system, when by some oversight a valve became choked, and the plants that were in a flourishing state the night before were found scalded; the boiler was rent into fragments, and the anticipations of the operator frustrated.

Flues, the medium through which hot air is conveyed, are of remote antiquity, and were introduced into this country for garden structures at the period when Dutch gardens were in vogue. Flues were first used to keep the frost out of the greenhouses of that date, and to prevent the frost destroying such plants as *Kerria japonica*, *Pæony Moutan*, and *Aucuba japonica*. They were constructed similarly to what they are now, and although that mode of heating was applied to the cultivation of plants requiring a high temperature, yet the flue remained in its almost original condition, or unimproved. At no period were gardeners very partial to this mode of heating, for we find them heating their hotbeds for Pines, and growing them by dung heat satisfactorily without a flue at all. Vines, too, were brought forward by a bed of fermenting materials, the flue being only used as an auxiliary to ripen off the fruit. Dung, tanner's bark, &c., were more or less used to promote warmth in the first stages of early forcing, for very obvious reasons—the heat was moister than that of a flue, became more equally diffused through the house, and was not liable to burn the plants at one end and starve those at the other. Besides, flues are liable to dry the air too much, and so, instead of conducing to healthy development, may prove baneful by drying up the juices of the plants, and unsatisfactory in their results.

Heating by hot water was not much in vogue until it became known through Loudon's "Gardeners' Magazine." Its cost was a hindrance to its general application; but still it gained ground, and is now generally adopted.

On these two latter modes of heating garden structures I propose to offer a few remarks. I shall not attempt to disguise my prepossession in favour of hot water, nor will I say one word more about either than has been confirmed by experience.—G. A.
(To be continued.)

GRAPES AND OTHER GARDEN PRODUCE IN AUSTRALIA.

FROM correspondence received by the last mail, we find that the cultivation of the Vine is likely to become a most important branch of industry in the Australian colonies. The area adapted for the growth of this plant is practically unlimited, and we believe no pursuit can be entered upon that promises more certain remuneration to an industrious and enterprising person possessed of a little capital. The slopes of the ranges seem almost as if designed especially by nature for the Grape, and it is not surprising that the experiments that have been tried have proved remarkably successful. Several parties in the colony of Victoria have fenced in from 50 to 100 acres for the cultivation of the Grape, and we know of parties having 80 acres in full bearing. Wine-presses are being erected capable of pressing 10 to 15 cwt. of fruit at one time. There is one vineyard alone, the produce of which will amount to upwards of 200 hogsheads this season, the entire crop of which has been sold to one wine-merchant. The price of the colonial wine is 16s. per dozen. The

sorts usually cultivated are Black Hamburgh, Black Prince, Muscat of Alexandria, Black St. Peter's, &c. The bunches usually grow very large, some have weighed as much as 10 to 11 lbs. each. The individual berries attain considerable dimensions, many being nearly as large as black Plums. With such facts before us we can more readily credit the tales of eastern travellers about the monstrous products of the Syrian vineyards. The mode of cultivation is very different from that pursued in England; the Vines are planted about 5 feet apart, and trained in a similar way to espalier Apple trees. There are upwards of 4000 acres employed in growing Grapes in this colony.

Tobacco also is being largely cultivated and with tolerable success, but a great drawback is that the rainy season interferes with the drying it, so that they are obliged to resort to artificial means, which injures the quality.

Some of the Chinese diggers have just commenced to grow ginger, and it is said by the growers to be in quantity and quality equal to that grown in China, which is the native habitat of the root.—W. P., JUN., *Camborne*.

WORK FOR THE WEEK.

KITCHEN GARDEN.

CONTINUE to thin the crops that require it whilst they are small, and in every case where practicable loosen the soil about them. If dry give them a good watering, when the soil being loose its beneficial effects will be so much the greater. *Basil* and also *Marjoram* that have been sown in beds to be thinned out to about 6 inches plant from plant. *Beans*, make another sowing. Top the most forward, if not yet done. *Beet*, make a small sowing of Red. When it is sown early in rich soil, it sometimes becomes too large and coarse, and does not retain its colour in boiling, nor looks so well in salad, as that which is smaller of the same variety. *Carrots*, make a small sowing of Early Horn. *Cabbage*, sow a little seed for autumn produce. Some of the smaller sorts should be preferred for this sowing. *Cauliflowers*, plant out some from the first sowing in the open ground. A small quantity planted from two or three sowings will keep up a succession better than the small stunted plants of very early sowings. *Cucumbers*, peg down the plants on the ridges as they advance in growth, and when the hand-glasses will no longer contain them, set these on three bricks placed edge-ways or on croch sticks. When they require water give it to them milkwarm early in the day. *Onions*, after thinning loosen the soil between the rows, and if the weather is dry give them a thorough watering. The thinnings of the beds to be planted out and to be watered every night if the weather is dry until they take fresh roothold. This must be particularly attended to, as the roots should be very near the surface. *Peas*, the last sowing of Knight's Dwarf to be made, as it is longer in coming into bearing than any other. Continue to earth-up and stick the advancing crops. If the pods of the early crop do not fill well in consequence of drought, give them one good root-soaking which will be sufficient for them while they last. The method frequently pursued of giving plants in the open ground a "small drop" of water every evening or morning cannot be too much deprecated, such sprinklings cake the ground and lower the temperature of the soil without any corresponding benefit to the plants. *Radishes*, make another sowing of the various sorts. *Savoy*s, plant out some of the early sowing. The dwarf sorts may be planted at 1½ foot apart in the rows, the rows to be 2 feet from each other. The larger sorts to be 2 feet from each other in the rows, and the rows 2½ feet apart. *Tomatoes*, as they are usually planted under a south wall where they receive but little benefit from a passing shower, they should be occasionally watered and kept mulched with short litter. Nail and stop the shoots as they advance in growth. Hoe, rake, sweep, and keep every part of the garden clean.

FLOWER GARDEN.

Pay particular attention to the stirring of the soil amongst the plants in beds and borders. This will be attended with the best results; let it be continued until the plants begin to grow and cover the surface of the bed, when it should be discontinued. Be sure that plants growing in vases, baskets, &c., are properly attended to, and thoroughly watered at the close of these hot days. A full sowing to be made of Brompton Stocks and all biennials for the flower garden. Make a successional sowing of some of the choicest hardy annuals for autumn-flowering. Hollyhocks to be

staked and tied, and attended to as they advance in growth. The Roses should likewise have all the attention that can be spared at this busy season. Remove all superfluous shoots and suckers, and keep a sharp look-out after insects. One great fault to be frequently met with is, mixed beds or borders of herbaceous plants with stiff high plants at the edges. Where sufficient variety does not exist, some of our dwarf plants, such as Mignonne, Musk, Forget-me-not, Verbenas, and Calceolarias may be introduced with advantage. The newly-planted things will require frequent attention, as under the best management failures will sometimes occur. These should instantly be made good, and the tying and staking of everything requiring support on no account delayed. Where an immediate display of flowers is not wanted, the buds may be pinched off for a week or two to encourage the plants to cover the ground. Creepers against walls and trellises to be constantly gone over to tie or nail them in. Take early means to eradicate all the broad-leaved plants and coarse-growing grasses from the lawns which they much disfigure, and keep them closely cut with the scythe or mowing machine.

FRUIT GARDEN.

Attend to disbudding Peaches, Nectarines, Apricots, &c. Pick grubs off Plums, Apricots, and Pears. Syringe Cherries, &c., to destroy the aphids. Give Strawberries a thorough soaking after the blossoming period, and put some wheat straw or other covering between the rows to prevent heavy rains from soiling the fruit. Thin the shoots of Raspberries to two or three of the strongest if not already done. Disbud Figs, retaining no more wood than is required for the next season.

STOVE.

Let rambling shoots have frequent stopping. Shift Gloriosas, Erythras, Clerodendrons, &c., and give liberal supplies of weak manure water. Continue to shift all Orchids that require it. The best time for shifting Saccalabiums, Vandas, Camarotis, Ærides, and all similar plants is as soon as they have done blooming. Now is a good time to pot Peristerias, Phaius, and Cymbidiums that are starting into growth.

GREENHOUSE AND CONSERVATORY.

Young growing plants of Heaths and other hardwooded plants to be placed in a spare pit where the lights can be readily removed, to take advantage of dews or light showers; and where the shading, which will sometimes be necessary, can be readily removed, plunge the pots about half their depth in cinder ashes. The stock of Balsams and other annuals grown for filling the vacant places in the conservatory, &c., should be encouraged by frequent shifts. Keep them in bottom heat and near the glass. Pick-off the early-formed bloom-buds, as the plants should attain a considerable size before being allowed to bloom. Continue to train Kalosanthes, and water with liquid manure occasionally. Scarlet Geraniums to have liberal encouragement to grow them on. Fancy Pelargoniums for late-blooming will thrive better in a somewhat shady situation, and where they can at the same time be protected from heavy rains. Fuchsias, if not in their blooming-pots, should be transferred to them forthwith. Train in the desired form, and pinch back weak and straggling shoots.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

EARTHED-UP Cauliflower to keep it moist, as the weather with us continues very dry, and we are afraid of quite running out of water. Did the same with Peas and Beans for a similar purpose. Shaded young Turnips, &c., for the same purpose, and hoed with a Dutch hoe among growing crops, weeds or no weeds, in order to give a loose surface, which arrests evaporation almost as effectually as covering with a mat or litter. One disadvantage is that the loose surface keeps out heat as well as keeps in moisture. Grubbed out and wheeled to rubbish-heap, to be covered with soil, the greater portion of the Broccoli; had the ground well trenched-up, and a little dung added, and will sow with Peas, watering them well, and will stake this the last sowing of the Marrowfat kinds. When we read such directions, "Trench-up spare ground for early crops of Greens, Broccoli," &c., it is enough to make one's teeth water with envy, and especially when we happen to see large quarters lying fallow for half the summer. No doubt it is more pleasant to be able to do things in this regular fashion, and to take only one or two

crops from the soil in one season; but there are many of us who can hardly ever give the ground a moment's rest. For cropping in this style it is a great advantage to be able to get hold of a border in which lots of the Brassica tribe may be pricked-out in rich soil, and 3 or 4 inches apart, and then they may be transferred with the trowel to places as soon as room can be found for them. At present we have not a piece vacant; but one planted with early Potatoes, which we purchased to get a change of seed for next year, but the ground being so dry, though all right below, the tops of the Potatoes have not appeared above-ground as yet. We may also say the same as to Asparagus and Sea-kale seeds that were sown; for, though all right, there has not been enough of moisture to tempt the seed-leaves above the ground, and such things we cannot think of watering. Regulated Cucumbers, Dwarf Kidney Beans in bearing, and stopped and watered those merely under glass protection; also placed ridge Cucumbers, Vegetable Marrows, &c., under a cold frame to harden-off the plants for open air, but will, if possible, give a few the protection of some old lights over them, as those on ridges have not done first-rate for several years. Thinned Lettuces, and planted a lot on the north side of a bank, where we think they come sweetest and best in summer; but had we plenty of ground we would not transplant at all, but would sow thinly in rows, and thin to a foot or more apart. We always think there is an additional crispness in sown Lettuces over transplanted ones, and then the labour is less. Pricked-out Celery, and will plant-out some of the earliest as soon as the trenches are cleared of bedding plants. Cut the flowering-stems of most of the Sea-kale; this in the young state makes a nice vegetable when boiled, and would be preferred by many to a succulent Cabbage, though that, too, is very nice.

General treatment much the same as before.

FRUIT GARDEN.

Caterpillars appeared on some Gooseberry-bushes; but when we thought of starting them with a sprinkling of soot we found there were none to sprinkle, and hope they will not return again. Of course the birds will get the credit of this, and I suppose they deserve it, but we were too busy elsewhere to be quite sure of the matter from observation. Gooseberries will be a very heavy crop, although the frost nipped a few, and did some injury to Currants. Went over Cherry trees, regulating the shoots, and steeping the points infested with fly in weak Gishurst, and engined strongly with clear soot and lime water several times afterwards, and watered at the roots in some cases as previously detailed.

Thinned fruit in orchard-houses, which in some cases had set as thick as ropes of onions. Will use the fruit bruised-up for prussic acid tea, as but few will be used for tarts. Thinned Grapes, regulated shoots in late vinery, and attended to Melons, setting the fruit on slates and bricks, and keeping those in bloom rather dry. Out of doors we hope we shall get a good drenching for the Strawberries, as we should like the ground well wetted before putting straw or litter between the rows. In syringing and engining at this season we can hardly fail to hear lots of encomiums on two kinds of *hydropults*.

We have not a word to say against them, and the immense sale renders them independent of anything of that sort. Never, however, did we know a case more illustrative of what "there is in a name." Ladies are quite enraptured with them. We have had specimens sent to us, with and without pails, and can see no advantage in them, except the flexible tube, which, in many cases, would be an advantage, and the flexible suction-tube which might be placed in a cistern in a house, and the hydropult worked at the farther extremity. Hearing so much of the ease in working the "pult," we were quite surprised at the muscular exertion required in the several specimens sent to tempt us into the purchasing vein. No doubt there will be the advantage of not getting out of order easily; but as a deliverer of water with force, and to a good distance, the want of an air-vessel and good lever power, to lessen the necessary exertion, will, in our opinion, be drawbacks to the continued popularity of the hydropult.

As this is the time for looking over Pine plants, some inquiries have reached us as to mixing old and new tan together for Pine-beds, Melon-beds, &c. When we used tan rather largely, we gave up mixing it, as the heat was thus made so irregular, and often so violent. We preferred placing the new by itself at the bottom of the bed, and the old at the top, or just the reverse, if the tan though new was sweet, so as not to injure anything. For

Melons, if we suppose there were 18 inches of tan rather old, and 18 inches of fresh, we would mix the new and old together for 27 inches, and have 9 inches of the older between the mixture and the soil. That thickness would keep a regular heat a long time. Attended to watering Figs, Peaches, &c. Potted Vines, placed the plants where they could have more light, and gave routine treatment as detailed in previous weeks.

FLOWER GARDEN.

Here daisy-kniving, rolling, mowing, and planting, have been the order of the day. Would have done more of the latter if the weather had not been so dry. Hoed among the bed planted to keep the surface rough and open. As already noticed, we have done the main ribbon-borders in straight lines this season, and think they will look well. There is one sloping border against a south wall between 300 and 400 feet in length. This border is 12 feet wide, and at the back is raised 2 feet above the pathway in front, sloping down to the verge. On the other side of the walk is a double-sided border rising also in the middle, 14 feet wide, and having slight iron columns 18 feet apart along its centre and 7 feet above the walk for chains to be suspended between each for creepers. On the wall border, which wall is covered with Roses, creepers, &c., the first line of ribbon is 4 feet from the wall, from thence to the verge are seven rows more, making eight in all. From the slope of the ground there is room enough for these to be massive in the rows, and they make more room for themselves as they grow. The object is to have every line distinct, and yet no space left between the rows, but the one to abut on the other. The rows are as follows, beginning next the wall—*Salvia fulgens*, 18 inches apart; *Ageratum*, 16 inches apart, strong bushy plants; *Trentham Rose Geranium*, 13 inches apart; double white *Feverfew*—fine strong plants—9 inches apart, but every other plant is nipped down to secure continuance of bloom; *Perilla*, not yet in, 1 foot or so apart; yellow *Calceolaria*, strong, 1 foot; *Brilliant Geranium*, 1 foot, strong plants; and next the verge *Cineraria maritima*, 1 foot apart, being the first time we have had it in a straight line.

The border on the other side is shorter, but is planted in the same manner, the line on the top of the ridge being *Salvia*, and then the seven others on each side.—R. F.

TO CORRESPONDENTS.

SOFTENING HARD WATER FOR PLANTS (A Subscriber, Devizes).—As you are compelled to use such, though a tank supplied from the house and greenhouse roofs can usually prevent such compulsion, we recommend you to have the pump water mixed with a little soda, such as washerwomen use—one pound to sixty gallons—and let it after the mixture be exposed to the sun and air for a day before using.

VINE-SHOOTS GANGRENED (T. J. S.).—We think the cause of the ends of the Vine's young shoots "fogg-off," or gangrening, as in the specimen sent is, that the roots have descended into a cold or ungenial soil. We would remove the soil down to the first tier of roots, and replace it with a mixture of equal parts light loam and decayed stable manure. If the roots are outside the house, cover the surface with mulch at night and during cold days, but have it uncovered during sunny days and warm rains.

SMELL FROM LIQUID MANURE (N. D.).—There is no offensive smell from any liquid manure except house sewage. The smell from this may be removed by mixing with it a little chloride of lime, but the earth itself is the most effective deodoriser. The smell of the most offensive liquid manure is gone in an hour after it has been poured upon the soil.

BOILER AND PIPING FOR A PIT (T. Record).—A small tubular boiler such as used to be made by Stephenson would suit your purpose, and so would a small saddle-back boiler. If you merely wanted Cucumbers and Melons in summer two three-inch pipes all round your span-roofed pit, 50 feet by 12 feet, would suit you, though, notwithstanding the extra expense, we would prefer four-inch pipes. We are supposing that you do not mean to give the Melons much bottom heat, though in such a long house a part might be shut off to have Cucumbers early; but then you would require pipes for bottom heat.

MYRTLES NOT FLOWERING (C. H. R.).—Like most things, Myrtles flower best when they have been exposed to the full sun, which gardeners are unwilling at times to allow these potted plants, as it browns the foliage. We have it flowering most seasons against a wall outside, and producing myriads of berries; and if your plants were well ripened the preceding season you would have flowers also, although, as stated above, the foliage might not be of so delicate a green.

GERANIUM REIDII (Idem).—We cannot affirm that the leaves you have sent are from *Geranium Reidii*, as we know but little of that variety, and it is difficult to name anything from leaves only, and bedding Geraniums, which are now so numerous, cannot well be named without seeing a full-sized plant. It is very likely your gardener is right, as it is a red-zoned variety somewhat in the way of *Blazer*.

BLIGHTED LEAVES ON PEAR TREE (An Old Subscriber).—These appear to be caused by the cold winds we have had of late, at a time when the young foliage was in a delicate condition. The return of drier weather is the best remedy, if not the only one; but if the foliage that is to come becomes in like manner blistered and diseased, then something else is the matter, and we will be glad to hear from you again.

WATER-CRESS CULTURE (Agricola).—The following system, which is that followed in the metropolitan counties, for the supply of the London market, we extract from "The Cottage Gardeners' Dictionary." The green slime of which you complain arises from the water being too stagnant. Let all the water off from each terrace occasionally, and keep a gentle flow constantly:—"The trenches in which they are grown are so prepared, that, as nearly as possible, a regular depth of 3 or 4 inches can be kept up. These trenches are 3 yards broad, and 87 yards long, and whenever one is to be planted the bottom is made quite firm and slightly sloping, so that the water which flows in at one end may run out at the other. If the bottom of the trench is not sufficiently moist, a small body of water is allowed to enter to soften it. The Cresses are then divided into small sets or cuttings, with roots attached to them; and these are placed at the distance of 3 or 4 inches from each other. At the end of five or six days a slight dressing of well-decomposed cowdung is spread over all the plants, and this is pressed down by means of a heavy board, to which a long handle is obliquely fixed. The water is then raised to the depth of 2 or 3 inches, and never higher. Each trench is thus planted annually, and furnishes twelve crops during the season. In the summer the Cresses are gathered every fifteen or twenty days, but less frequently during winter; care is taken that at each gathering at least a third part of the bed is left untouched, so that neither the roots may be exhausted, nor the succeeding gathering delayed. After every cutting, a little decayed cowdung, in the proportion of two large barrowfuls to each trench, is spread over the naked plants, and this is beaten down by means of the rammer above mentioned. After the Water-cresses have been thus treated for a twelvemonth, the manure forms a tolerably thick layer at the bottom of the trench, and tends to raise its level. To restore it to its original level, all the refuse should be thrown out upon the borders which separate the trenches from each other. These borders may be planted with Artichokes, Cabbages, or Cauliflowers."

CAMELLIA LEAVES PARTLY YELLOW (H. M. P.).—But for your statement we should have supposed that the larger leaf was going through its natural course of decay before dropping from the stem; for evergreens are to a certain extent deciduous, and part with their old leaves as well as deciduous trees, though not in winter as the latter do. From the details you give we are convinced that the plant is suffering from bright sun and condensed moisture or hot vapour. The remedies are shade in bright sun and air early in the morning, or rather on constantly, so that the leaves shall be dry, and no moist hot vapour about them when the sun reaches them.

COBEA SCANDENS FLOWERS ALTERED (Idem).—We have noticed the change into a five-segmented corolla of the flower of the *Cobea*, and the extra strength from standing the winter may be partly the reason. Though somewhat rampant, there are few more splendid climbers, and the large bell shows so many tints of colour.

LEAVES INJURED (L. N.).—We should attribute the holes in the Horse-chestnut leaves to insects or caterpillars. From what we could see of the Vine-leaves, which were much dried, they seemed to have been scorched, or rather scalded, by the sun shining on them when in a damp state. Air early in the morning or a little all night will remedy that. The Golden Hamburg would be better to be suspended 9 inches farther from the glass, or a little shading put on the glass.

ROSE-LEAVES (W. X. W.).—With spectacles on nose, and with a microscope to help, we failed to find one insect on your Rose-leaves. There were marks as if a scale had been on them, which must be washed off if there, and also marks as if thrips had been nibbling, and these must be smoked and syringed. We are not certain on either point as to these insects being present; but we must say that it is rarely an insect will come to us. If the leaf is merely put into a letter, it should be enclosed in a box or something, to prevent the insects getting away or being smashed by the post-office punches.

VINE-LEAVES BLOTCHED (B. A.).—The leaves were quite dried when we received them, and we have no doubt the blotches are produced by scalding—by the sun shining on the leaves when in a moist state, or from there being some scars or knots in the glass. In the latter case paint the scars over, or rub them with putty; in the former give air early, so as to have the foliage dried before the sun strikes powerfully on the house. The great vigour of the Vines would render them more liable to the casualty in either case.

BEDDING GERANIUMS FOR A COLD DISTRICT (B. H.).—We have no doubt but the kinds you mention—*Madame Vaucher*, *Princess of Prussia*, and *Christine*—will do as well as any other in such a situation. Generally speaking, the kinds most impatient of cold are the variegated kinds, especially the golden-edged varieties. In cold or late places old plants are better than young ones, and a tolerably good show will be had; but it is needless to say that in more favoured situations it will be better, although we are far from certain but that you will beat your more warmly located brethren in *Calceolarias* and *Verbenas*.

SOWING ZINNIAS, SWEET SOULTAN, AND ANEMONES (A Would-be Gardener).—It is almost too late, excepting under favourable circumstances, to sow the two first-named annuals; but if you have a hotbed, and can sow a quantity in separate pots, and thin them out when they come up, and gradually harden and plant out, they will succeed pretty well. *Anemone* seed may be sown when ripe. Cover very slightly, and do not water however dry the weather may be, and it is likely you will be successful.

DESTROYING DAISIES ON A LAWN (J. Searle).—We fear we cannot give you much hopes of entirely eradicating this inveterate pest. Taking up the turf and relaying it, or, what would be better, exchanging it for other turf less affected with daisies, and at the same altering in some measure the character of the ground by adding some enriching substance will partially remedy the evil; but the easier way is to cut off the heads of the daisies every alternate day with the "daisy-knife" described at page 378, which is by far the best tool we are acquainted with for the purpose. In the after part of the season you will be less troubled with these common-looking flowers, but most lawns are more or less troubled with daisies in early summer. Weeding is a tedious job and far from effectual, and ground favourable to the growth of daisies will produce them in spite of all ordinary preventives, that we advise the more frequent cutting of the heads as the best and cheapest manner of abating the evil.

FLUE-CLEANING.—The simple plan of heating a small greenhouse, described by "J. B.," is exactly suited to my requirements, and he would oblige by stating how the flue is to be cleaned, as I conclude it would not answer to break the mortar and remove one of the pipes.—A.

FERNS IN A PLANT-CASE (E. Payne).—You will see a work on the subject announced in our Journal to-day.

DWARF SWEET PEA.—I have often thought why a dwarf Sweet Pea has not been obtained as well as a dwarf eatable Pea. Can botanists or florists give a reason?—M. F.

DESTROYING THE BLACK FLY ON CHERRY SHOOT (An Old Subscriber).—If your trees be against a wall, it is good practice to bend the tips over and into a basin of tobacco water, so as to immerse all the part affected. A syringing of the tree will do some good, though not so much as dipping. Should this process appear too tedious, nipping off all the tips is the next best remedy. Cherries are generally infested with this insect.

REMOVING WHITE LILIES (A Would-be Gardener).—As soon after the flower-stem dies down as convenient, as at that time the bulbs are at rest. It is, however, better to plant them at once, and not lay them by for a season as is done with Hyacinths, Tulips, &c. They are not particular as to soil, and are often seen in cottage gardens in great perfection, where they have not been disturbed for years.

ROSE-LEAVES CURLING-UP (C. H. R.).—Cold winds will cause this at times when there is no insect, but generally the latter accompanies it. If it arise from the former cause there is no preventive for out-door plants; but insects may be destroyed by dipping each shoot in a decoction of tobacco, rubbing the leaves at the same time through the fingers. Taking the case in time is the best preventive. The evil is, however, a very common one, and generally is submitted to in large collections as being too tedious and expensive to overcome.

WATERING PLANTS (Old Subscriber, Hampshire).—No harm can be done by watering the roots of plants at any time of the day, but the foliage ought not to be wetted in the bright glare of sunshine. It would be a hopeless affair to leave all watering until the sun went down. In dry weather one or two men are watering here all day long. In the middle of the day potted plants that are needing it are supplied; and in the morning and afternoon (say after half-past four or later) those plants whose foliage must be wetted are supplied with water; but we are promised an article on this subject by one of our contributors.

MATCH BED TO CALCEOLARIA AMPLEXICAULIS (B. H.).—If the beds are near together, so that the eye will catch both at once, plant both with the Calceolaria; or if you have not sufficient plants, plant the centre of both with it, and the outside with Calceolaria Aurea floribunda, or some similar kind. The writer of this article is more in favour of symmetry than of multiplying varieties; and, assuming you to edge the bed with something else, the two kinds of Calceolaria will do very well for the centre.

VARIEGATED AGERATUM (Idem).—The white edge of this plant is not sufficiently clear to look well, but it flowers tolerably freely, the only difference being that it is dwarfer than the plain; but the variegation of the foliage is not white enough to entitle it to more than a second or perhaps third class place among plants of white or variegated foliage.

EDGE FOR A PERILLA-RED (Idem).—Seedling plants of Cineraria maritima, though for a time less white than cutting ones, are, nevertheless, preferable to variegated Balm; as likewise is variegated Alyssum, with its myriads of white flowers. A variegated Scrophularia also promises well; while the Centaurea candidissima is unquestionably the best white-foliaged plant we have for this and like purposes.

NAMES OF PLANTS (T. T.).—1, A Dacrydium, probably Mai; 2, Carmichaelia australis; 3, Dacrydium excelsum; 4, Ciantus puniceus; 5, Phyllocladus trichomanoides. (Philos, Pilkington).—6, Hippeastrum reticulatum, v. striatifolium. (Mrs. W.).—1, Alonsoa Warszewiczii; 2, A Gnaphalium, probably G. arenarium, but cannot be certain without knowing the plant's habit. (Subscriber).—1, Alchemilla vulgaris; 2, an umbellifer without leaves or fruits; 3, Veronica chamaedrys; 4, Lychnis diurna. (Eight-years Subscriber, Gravesend).—1, Hardenbergia menophylla; 2, Polygala Dalmatiana; 3, Abutilon venosum. Nos. repeated.—1, Asplenium filicoides; 2, Adiantum capillus-Veneris. (Tyro, Chesham).—Polypodium dryopteris. The book on exotic Ferns is in the press; you will soon see it announced and the price. (Juvenis).—1, Geranium Robertsonianum. The rest have no leaves. We cannot afford time to examine such specimens. Those who want this kind of information must take the pains at least to send decent specimens, and so packed as to come in good preservation.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

NORTH HANTS POULTRY SHOW.

The growth of poultry shows in connection with agriculture is slow. We must wait till we have such statistics as they have in France. Where, as in that country, a large sum is put down as the value of the poultry stock of the kingdom, attention will be drawn to the subject, and it will take the prominence it deserves. Few things are more profitable as food or more valuable; few things of as little money value and as inexpensive to keep will provide as much food. A hen that rears twenty-four chickens in the year has earned money, not only by this fact, but by the surplus eggs that are eaten or sold.

Poultry is kept on every farm, but it is not made a pursuit; nor is it studied. Every other description of live stock is turned to the best advantage. Times, seasons, and age are all studied with a view to the greatest productiveness and the best return for outlay. Not so the poultry. The chickens are killed off and eaten. The old stock remains year after year, becoming less prolific as they get older, and it is then declared poultry does not pay. We need hardly say with such feeling and such management there will not be pride enough in it to cause a desire to exhibit. Yet at every agricultural meeting the poultry is first visited—it forms the chief attraction; and many say they believe they have better birds at home than those that take

the prizes. To every other class the pursuit affords real pleasure. The clergyman, the physician, the solicitor, the merchant, and very often the statesman, make it one of their relaxations. Exhibitors grow from these classes because they watch their birds, and discover their merits, which the agriculturist, who has all the machinery for success at work, whether he will use it or not, cares for the Gallinaceæ only when chickens are wanted for the table or eggs are "desiderata" at the breakfast table.

We confess to a liking for an agricultural meeting. It is to the county what the Christmas gathering is to the family. It is a holiday in which all classes share. Though we do not go to the length they do in Ireland, as related in the *Times*, where the two-year-olds and the three-year-olds have handed down the feud that began about a cow from father to son till its sad records are written in the history of every assize, yet we are always amused at the delight evinced by those who come from the particular village or district that has produced the first-prize animal. There is a heartiness in the pursuit which is shared by all who are concerned in it, and there is an absence of selfishness which is a relief to many who have been for years subject to the close competition and comparative selfishness of those who have been their neighbours, and have followed the same calling as themselves in large towns. The man who has had charge of the horse, ox, sheep, or pig that has taken first honours has, perhaps, more real interest (apart from the money question) in the success than the owner. Hence it becomes a holiday for all.

The *Dorkings* were very good, and the exhibitors lay far apart—Somersetshire, Wiltshire, Buckinghamshire. Mr. Brown, of Chard, took first with very large birds; Mr. Fowler, of Aylesbury, second. All the pens were shown in excellent condition; but these two pens were remarkable in that particular. Among the *Cochins* there were, as usual, many faulty combs. The first prize went to Nottingham; Mr. Fowler took the second. It will speak for a good class of *Game* when we say that Mr. Rodbard could only win a high commendation. Mr. Sidney Dupe, of Bath, showed a remarkably good pen. He was hard run by Mr. Adams, of Basingstoke. Hampshire is strong in *Polands*, and the class did not belie the reputation of the county. Mrs. Pettat and Mr. T. P. Edwards left nothing to desire in their prize pens. With one exception, the *Spanish* were deplorably weak in quality. Mr. Rodbard sent a pen worthy of any exhibition in the kingdom. The second prize was withheld, as, in four others, the cocks had falling combs. There was strong competition in the *Hamburgs*—Mrs. Pettat took both prizes. It was hard to give only high commendations to Messrs. Brown, Keable, and Lamb—it was truly an excellent class. Mrs. David Smith showed one of the best pens of *Turkeys* we ever saw. Mr. Matthews was deservedly a prizetaker, and Mr. Boxall's were good birds. Where Mr. Fowler shows *Geese* he is generally successful. His pen weighed 55 lbs., and Mr. Mansfield's improved White Dorset weighed 48 lbs. The latter would have been a great weight some years since. There was a good entry of *Ducks*, and Mr. Fowler was again at the head with three birds weighing 21 lbs. Mr. Rodbard's Rouens were second. Mr. Fowler showed three ducklings that weighed 18½ lbs. Six pens of otherwise good Rouen Ducks were disqualified by the lead-coloured bills of the Ducks. There should be no mistake on this head. The Rouen Duck should in every particular but size be the counterpart of the wild Duck and Mallard, and no wild Duck was ever seen with a leaden bill. Among the extra stock were some exquisite Duckwinged Game Bantams belonging to Mrs. Pettat, and some very good Silkie shown by Mrs. St. John.

A lovely day, music, and a large attendance, especially of ladies, added to the liberal arrangements of the Show; and the untiring exertions of the Committee, with the tact, kindness, and urbanity of Mr. Downs, made this meeting a "very" holiday.

DORKINGS.—First, T. L. Brown, Chard. Second, J. K. Fowler, Aylesbury. Highly Commended, C. Smith, Salisbury; Mrs. D. Smith, Browning Hill House. Commended, W. B. Boxall, Strathfieldsaye.

COCHINS.—First, C. T. Bishop, Lenton. Second, J. K. Fowler, Aylesbury. Highly Commended, Rev. J. D. L. Simmonds, Chilcomb Rectory, Winchester; Mrs. St. John, Oakley Cottage.

GAME.—First, S. Dupe, Bath. Second, E. S. Adams, Basingstoke. Highly Commended, J. R. Rodbard, Wington, Bristol; S. Jesse, Basingstoke.

POLANDS.—First, Mrs. Pettat, Ashe Rectory. Second, T. P. Edwards, Lyndhurst. Commended, Mrs. Pettat.

SPANISH.—First, J. R. Rodbard, Wington, Bristol.

HAMBURGS.—First and Second, Mrs. Pettat, Ashe Rectory. Highly Commended, J. Keable, Thatcham, Newbury; J. Lamb, Highworth, Wilts; T. L. Brown.

TURKEYS.—First, Mrs. D. Smith, Browning Hill House. Second, H. Matthews, Sherborne St. John. Highly Commended, W. B. Boxall, Strathfieldsaye.

GESE.—First, J. K. Fowler, Aylesbury.

DUCKS.—First, J. K. Fowler, Aylesbury. Second, J. R. Rodbard, Wrington, Bristol.

Mr. Bailly, Mount Street, Grosvenor Square, was the Judge.

AGRICULTURAL HALL POULTRY SHOW.

THE poultry exhibition that has just been held in the Agricultural Hall, Islington, has had unusual difficulties to contend with, and, notwithstanding, has proved itself a most successful one. The time of year chosen is the one of all others most calculated to prevent an extensive entry, as adult birds are, in many instances, fast falling into bad feather now the laying season has so far progressed; and again, chickens however early hatched are as yet not sufficiently matured for public exhibition. Notwithstanding these obstacles, our readers will be pleased to learn that a collection of about three hundred pens of generally excellent birds were entered.

Black *Spanish* first drew the attention of visitors on their entrance to the Hall. In this class the lack of condition was perhaps more evident than in that of any variety in the Show—a shortcoming we were well prepared for, as this breed of poultry is considered as being the most susceptible of mischief from the effects of unfavourable weather of all others. Want of condition was consequently universal—a failing particularly developed in pen 13, which were undoubtedly first-rate, but had to content themselves with a high commendation from this cause alone. Viscountess Holmesdale took the first position in the prize list, with Mr. Wright and Mr. Rood closely competing. In *Grey Dorkings* the competition was excellent, Viscountess Holmesdale was here again successful with a most valuable pen of rosy-combed ones, adding to this achievement a second position with the pen so frequently exhibited by her ladyship last season, as to now require but little description. Although the establishing such a yard of *Grey Dorkings* must have been attended with great outlay at the outset, we believe the coming season will prove that to wrest away the Dorking laurels from Linton Park will be the most difficult of all poultry feats to Dorking exhibitors. Mr. Drewry was a very good third, and some of the highly commended pens were but little less deserving. In the Buff *Cochin* class, Mr. C. T. Bishop, of Lenton, near Nottingham had it all his own way; the pen he exhibited making it an easy “walk over” from everything in the class. We congratulate that gentleman on his possession of so excellent a pen of birds, and wish them continued success. We regret to find, however, so palpable a confirmation of a report recently current that Mr. Charles Felton, of Erdington, near Birmingham, purposed selling all his birds, and turning his attention exclusively to floriculture. The present owner, however, can well confirm the old axiom that “the wind is indeed a sorry one that blows good to none.” They are one of the best pens ever yet brought before the public. By some mistaken entry a pen of the best White *Cochin* chickens we have seen this year were shown in this class; but as the limit was to Buffs alone, they could not appear on the prize list. In the next class for *Cochins*, Any other colour, their position would have been a good one. In this latter class Captain Heaton exhibited a pen of partridge-coloured ones, of which that gentleman has reason to be proud. The plumage was not only excellent in colour, but the condition was most praiseworthy. There were many other first-rate pens of this colour, and some excellent white ones. The classes for Pencilled *Hamburgs* were a poor apology for those we met with a few years back. It is too evident we miss those noted breeders Messrs. Archer, Chune, Sharp, and Worrall. The opening is a good one just now to achieve renown by the careful culture of the Pencilled *Hamburgs*, and to restore this really useful as well as beautiful race of birds to the high position they lately held. But however great the imperfections of these classes, those for the Spangled *Hamburgs* made more than ample amends. In both instances they were quite as near perfection as any one can reasonably hope to attain. A sad misfortune to the proprietor of the first-prize Gold-Spangled pen arose from an indiscretion, against which we have so frequently guarded amateurs—viz., putting strange hens together. In this instance the master hen not only completely scalped her companion, laying open the skin of the neck for more than 2 inches, but proved herself a perfect cannibal by absolutely eating away in every direction the whole of the flesh from the back of the neck

bone. By the order of the Judges, therefore, after the skin had been carefully sewn together, this hen was removed to a place of quietude. She can never recover so far as exhibition is concerned. We mention it simply as a warning to prevent others falling into the same mistake. The *Game* classes were well filled, and with a variety of excellent birds, the Black-breasted Reds and Brown Reds being perhaps the most perfect of any. The *Game Bantams* and *Black Bantams* were very good. In the Extra variety class of these little favourites, were some perfect Black, and also White Japanese Bantams, some excellent Brown Silkies, a very unusual colour, some Frizzled Bantams, and some White Silkies. The Sebright Bantams looked below par, as is customarily the case just prior to moulting. A Sweepstakes for *Game Bantams*, the entrance monies being divided into three prizes by the rules laid down on the prize list, brought only three competitors, all of them very good. Their respective positions as to the honour of winning were easily appointed; the question of pecuniary recompence was one difficult to determine.

Neither Ducks, Geese, nor Turkeys were entered, as these classes had on this particular occasion been purposely omitted from the prize schedule.

We must not conclude without stating that the Islington Agricultural Hall affords one of the best opportunities of holding an extensive poultry show of any extant. The capabilities are indisputable. The arrangements for poultry were good, and the attention shown it was apparent. We were glad to find that at future shows a new set of pens will be in use, altogether avoiding the objection this time so evident—that the doors being so small, it was nearly impossible to take any bird out or replace it without serious injury to its appearance.

On this occasion these pens were used as the best at the moment attainable, and the difficulty will be easily provided against in future. We also suggest that had the knowledge of the Show being about to be held been more notorious, a vast increase of entries must have ensued. It is not improbable that the Islington Show will speedily rank among the highest of our poultry exhibitions.

We gave the prize list last week.

INTERNATIONAL DOG SHOW, ISLINGTON.

OUR opinion of this Exhibition will be best expressed by saying that we hope it will be annual, and that the only improvement we can suggest is that there shall be in future only two one-shilling days. A week is too long a time for a dog to be chained up, even in a place as large and well ventilated as the magnificent glazed structure in which this Show is held.

It was a great success in every way. The dogs, amounting to more than 1600, included some of the finest specimens of each variety. They were arranged uniformly on broad benches at about 2½ feet from the ground; were chained at distances uniform and effectual to prevent contests; were kept scrupulously clean; were well fed and watered; and the company was very numerous. The Prince and Princess of Wales were there on the opening day, the 25th; and then, and on the day following, we saw there a large majority of the gentlemen and ladies who are well known not only among sportsmen, but of those who are fond of superior domestic animals.

The kennel in the centre of the Hall enclosing the twelve couple of the Duke of Beaufort's hounds was of itself an exhibition. They were models of the high-bred Foxhound, unsurpassable in condition, uniformity, and that confident expression imparted by courage, and power of endurance, possessed by no dog of any other breed. The Russian Wolf-hound, swift, keen, and severe; the German Boar-hound, heavy, large, and powerful; the Slave-hunting-hound, slow but terrible, and making Englishmen sad to think of such a pursuit; Greyhounds made to cleave the wind, and in form without a heavy or ungraceful line; Pointers and Setters, prime examples of combined strength, activity, and docility; Spaniels all vivacity and courtesy; Sheep Dogs unmistakably intelligent; Mastiffs well worthy of baronial halls, and fitting helps to their warders; Mount St. Bernards hospitable in look, and of frame telling of capacity to give help, and with voice that would reach from base to summit of the Alps; Newfoundland, calm yet resolute and strong; Bulldogs, best tempered, most enduring, and most ugly of dogs; smooth Terriers of varied vivacity; Skyes all gentleness; Dandy Dinmonts ready for sport; Maltese, all ill-temper like spoiled children; Toys of all forms, and as varied in disposition; all these well represented their especial classes.

Such were the characteristics which seemed prevalent in each variety; but for the first time at a dog show, there seemed an aristocratic bearing even pervading the dogs, and telling that they were used to good society.

DOGS.

SUMMER gardens and theatres have opened their doors; the Horticultural Exhibition has fixed its tent in the Chaussée d'Autin, and has followed the canine show at the Gardens of Acclimatation. How many painters would be delighted to have before their canvass, how many sculptors before their statue, group or bust, the increasing crowd that was moved, captivated, and enthusiastic before a Terrier no larger than a man's fist! An invention, one of the triumphs to the recent Show, is the little animal shown under a glass-bell. The air we breathe is, doubtless, too coarse for its lungs. There were three we could name, that were only shown to the crowd through the transparent walls of their crystal palaces. They are no longer dogs—they are little gods. More than a thousand competitors appeared at this Show, and among them, perhaps, two hundred drawing-room tyrants. That which is microscopic and liliputian, wordly, useless, and untidy, is that which concerns and interests us most in this Show. We respect the watch dog; we love the sporting dog; we will speak highly of the Newfoundland and the "Saviour" of Mount St. Bernard, if ever the Monthyon prize should be extended to four-footed virtue; but the pocket dog, the shelf dog, the dog that on a pinch could be carried in a reticule—this is our great attraction. Greyhounds more chilly than Méry, the poet of Marseilles, and which seldom go out without their over-coat; small Terriers, clean, sharp, shining, and muscular, even their muzzles look fine and intelligent, and their ears trimmed to a point stand up provokingly; silky Spaniels; King Charles's with sensual faces, reminding one of some Roman emperor satiated with the luxury of the latter and falling days of his empire; dogs from Havannah, which would almost seem crossed with birds from their lightness, feathering, and even claws—these are our delight.

It is impossible to recognise in the importance assumed by the pet dog of an opulent family, and for which the chicken is not white enough, the cushion soft enough, the collar comfortable, nor the *bombon* sweet enough, unless each comes from the first house in the trade—it is impossible to recognise the little wretch you had seen a few weeks before hanging down its head, suffering from hunger, and furtively seeking a social position—canine Jerome Paturot!

To a certain degree the features of dogs and men change with their conditions. Suppose two similar individuals: give to one a noble, easy, and harmonious life, and direct the habitual course of his thoughts to the highest spheres; attach the other to some low and obscure pursuit, and fix him to it. At the end of a given time these two, although similar at the outset, will differ so much in expression, that even form will be affected by it to the extent that no likeness will be found between those who were at first mistaken one for the other.

Formerly at the "Barrière du Combat," and in its neighbourhood, the dogs met with were more like hyenas or wolves. The same may be said of solitary and dangerous parts of the external Boulevards. The dogs acquired the ferocity of the people among whom they lived. Every shade of the human family finds its representative in the canine species. You can find the parvenu, the real nobleman, the smooth, the rough, those difficult and those easy to please, the arrogant and the humble, the sincere and the liar.

Note that food occupies a larger space in the canine than in the human composition. Many years ago Charlet, the popular painter said, "The best part of a man is that which is like the dog." Another has said, "The better I know man, the more I like dogs."—(Translated.)

DRONES OF A DRONE-BREEDING QUEEN.

THE question which has lately been discussed in your columns as to the utility of the drones of a drone-breeding queen in spring, really lies in a very small compass. The object of producing them in anticipation of forming early artificial swarms will be found futile; and, at the same time, a heavy tax must be laid on the broken brood of flourishing hives to maintain the life of the drone population.

It was shown in a paper from a German bee-master, for the translation of which your readers are indebted to the kindness of "A DEVONSHIRE BEE-KEEPER," that fecundation takes place only in a high temperature: 70° has been the lowest at which I have observed it, and a bright sun after midday seems also essential.

This spring may be considered to have been a favourable one for testing such experiments, having been milder than the average, and yet up to this day, May 28th, the maximum temperature has been but 67°, while there have been drones from a strong hive since April 24. It may be thence inferred that it will prove labour lost in this climate to attempt to form artificial swarms earlier than the natural season of swarming, when a superfluity of drones may be insured by maintaining one or two stocks in high condition.—INVESTIGATOR.

BEE LAW.

HAVE I any legal claim to a swarm of bees of mine, which I followed to another person's garden and saw them enter a hive which contained empty comb?—S. B. T.

[We can only give the same reply that we gave to a similar query some years since. Blackstone, in his "Commentaries," says, "A swarm which fly from and out of my hive are mine so long as I can keep them in sight, and have power to pursue them; and in these circumstances no one else is entitled to take them." Indeed, if the rightful owner quickly pursues the swarm, and keeps them in sight, and any one else should hive and keep them, it would be a larceny. We believe that if the bees have been quickly followed from the hive whence they swarmed, and have never been lost sight of, their owner is entitled to follow them on to another man's land and hive them. If the man on to whose land the bees strayed took possession of the swarm, or prevented the owner from doing so, we think the owner would have a legal remedy against that man. Of this we are quite sure—no one who is honest will prevent the owner of a strayed swarm following and recovering it.]

TIME FOR HATCHING SHOW BIRDS.

WHY should I give over hatching Cochins and all other birds that are intended for show? Would not these be just as good hatched now as those that are hatched in February or March? How is it that most breeders are giving over hatching now?—INCUBATOR.

[We go on hatching. The reason why so many give up sitting their hens after this is that hens begin to lay badly, and the yards are full of chickens.]

OUR LETTER BOX.

DEATH OF HAMBURG CHICKENS (*L. O. U.*).—We think there is little doubt, from the rapid way in which death follows the attack, that poison has something to do with it. As the first brood escaped entirely and all since have suffered, and as all have been reared on the same spot, we think it likely either that some poisonous herb has sprung up or that something is thrown down that is injurious. This latter is probably accidental. The sudden death excludes the idea of disease, which is always more or less lingering. Move them to another spot.

POULTRY SHOW AT THE AGRICULTURAL HALL.—We have been requested to state that the sole management of this Exhibition was in the hands of Mr. Douglas.

BRABHA POOTRA EGG-BOUND (*T. P. W.*).—From the weight of the egg, your hen is constantly in the predicament of an egg-bound fowl, and unless you can alter this she will die. Give castor oil every other day—a tablespoonful. Feed on cooling food, lettuce, and ground oats mixed with cold water. Whenever the patient appears in pain, and about to lay, lubricate the egg-passage with a feather dipped in oil. This will facilitate the extrusion of the egg. Her present state is a certain forerunner of fatal disease if not speedily relieved.

EGGS NOT HATCHING (*B. H.*).—The fault has probably been with the hens. There was no fault with eggs that produced chickens, and the mould followed death. Stale or musty bran is bad to keep eggs in. A box or tray is the best place to keep them in, with a little dry moss in the bottom; or, if the bran be fresh, they may be put on it.

SPANISH FOWLS (*An Old Subscriber*).—We totally differ from you. As a whole we consider the second pen was better than any, except the pen to which the first prize was awarded. One of the Judges, we know, would show no partiality.

PRESERVING EGGS (*A Constant Reader*).—If you refer to page 286 (No. 107, April 14th), you will find the result of our experience.

GUAVA JELLY (*J. Ferme*).—Put the berries into an enamelled saucepan, and let them simmer for a few minutes, mashing them with a wooden or silver spoon; squeeze them through a cheese-cloth or coarse muslin until the skins and pips are dry. To every pound of juice add a pound of white sugar. Boil for a short time until the jelly is inclined to set, which is ascertained in the usual way; then pour into small jars.

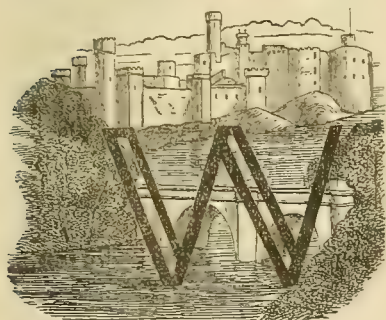
INSECT EJECTED FROM A HIVE (*W. T. Blantyre*).—It is only a black humble bee which had entered the hive to steal some of the honey. The bees caught the robber and killed him.

WEEKLY CALENDAR.

		WEATHER NEAR LONDON IN 1862.										
Day of Mnth	Day of Week.	JUNE 9—15, 1863.	Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon Rises and Sets	Moon's Age.	Clock after Sun.	Day of Year.
							m. h.	m. h.	m. h.		m. s.	
9	Tu	Meadow Clary flowers.	29.965—29.931	68—34	S.W.	.03	46 af 8	12 af 8	11 0	23	1 11	160
10	W	R. Brown died, 1858. B.	29.937—29.683	69—44	S.	.04	45 3	13 8	33 0	24	0 59	161
11	Th	St. BARNABAS.	29.386—29.322	70—47	S.	.20	45 3	13 8	56 0	25	0 47	162
12	F	Wild Clary flowers.	29.433—29.137	65—44	S.	.50	45 3	14 8	22 1	26	0 35	163
13	S	Butterfly Orchis.	29.575—29.519	70—43	S.W.	.06	45 3	15 8	50 1	27	0 23	164
14	SUN	2 SUNDAY AFTER TRINITY.	29.680—29.541	62—40	S.W.	.48	44 3	15 8	26 2	28	0 10	165
15	M	Mentzel born, 1622. B.	29.778—29.684	68—45	S.W.	.20	44 3	16 8	7 3	29	0 bef 3	166

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 71.7° and 46.0° respectively. The greatest heat, 91°, occurred on the 15th, in 1858; and the lowest cold, 30°, on the 15th, in 1859. During the period 145 days were fine, and on 107 rain fell.

PLANS OF FLOWER GARDENS.



E have received recently from "G. W." and others, many plans of flower gardens, all more or less creditable, if first attempts, but none of sufficient merit to deserve engraving.

The failures in these induced us

to send them to Mr. Fish, and ask from him a few remarks generally applicable to such designs. The following is his reply:—

"All of the designers should have taken more time and sent their plans correctly drawn. I mention this because so many young artists and young writers make so many apologies for plans being made in haste, and articles written in such haste, that the haste is to be the apology for all errors and mistakes. Now, the haste is all a mistake. The public can quite well afford to wait their time and leisure if it insures accuracy. Unfortunately I cannot always command this leisure, but many of my contributions would be much more to the purpose, and more pleasant reading besides, if I could command the leisure to revise, concentrate, and improve them. I presume that the Journal's correspondents are more anxious about the results of its conductors' judgment and experience than even terse and correct writing, though the latter would always be an advantage; but that want of leisure must be no excuse for defective plans and careless writing in young beginners. I state this the more faithfully because there has been much of slovenly roundaboutism, instead of directness and concentration of thought lately. A slight circumstance will better exemplify my meaning than a laboured essay.

"My first attempt at getting into print was in the pages of the 'Gardener's Magazine,' and this secured me the acquaintance, when I was a stripling, of the noble-hearted Loudon. Passing Porchester Terrace, Bayswater, one day with an acquaintance who was somewhat dandified, stilted, and ambitious withal, I introduced him to the worthy veteran, as I had a free permission for entrance there at any time. Amongst diversified talk about Leigh Hunt, Charles Lamb, Beaton's review of Herbert's 'Amaryllidaceæ,' &c., we passed into a quiet talk about the writings and the writers to the Magazine, and my friend came out with the statement that if ever he wrote anything he must do it slapdash there and at once, and then send it off at once, for if he took time he was sure to make a muddle of it. I shall never forget the look of the keen-sighted Loudon when he replied, 'It is all very well to write quickly just as the ideas offer, but it is vastly more important to correct and revise at leisure.

No. 115.—VOL. IV., NEW SERIES.

All writings that have lived and exercised a potent influence have been the result of patient analysis and careful revision. As an evidence, single periods in Hume's 'History of England,' are known to have cost their author a whole day before he could finally settle upon the composition and the best arrangement of the words.

"I felt there was but little hope for me, though some of my articles had been written some six or ten times over, every *i* carefully dotted, every *t* crossed, and all the rest of it carefully finished. (I think I hear our worthy conductors and the printers say, 'I wish you were as particular now'.)

"Now, though, unless in some extraordinary case, the labour to me would be too much to rewrite an article or part of an article, the point at which I would arrive is just this, as showing the value of revision and concentration at an early period, that scarcely a single sentence that I intended for the public has been written without being ennobled with printer's ink, whilst the writings of my slapdash friend who did everything best in a hurry never appeared in the 'Gardener's Magazine,' and so far as I know only once appeared in the 'Horticultural Register,' and even with respect to that, I well recollect the worthy Editor of that time, the late amiable and accomplished Mr. Main, calling upon me and stating that he would be obliged if I could use the liberty of seeing the lucubrations of my friend before they were sent, as but for the bare ideas he would himself have written the article six times over before he could reduce it into anything like presentable shape.

"My days of plan-drawing, unless to suit myself, are now over, though I think I have as good ideas as ever as to the suitability of plants for definite purposes, but the lesson I wish to convey is simply this, that with plans and essays, and articles, our young friends who wish to excel should send off nothing to the press in a hurry; should turn the matter upside down, side to side, each way and every way, and in reading over what they had written, should consult not only their common sense, but the clinking as it sounds upon the ear, as they may rest assured, that everything that seems in the least obscure and inharmonious in the arrangement to themselves, will be ten times more disagreeable and obscure to a stranger reader. Many an article of our young friends, that with a little revision and careful arrangement would stand out as a gem, showing how much the younger generation is progressing over that past and soon to be passing away, is just glanced over, scarcely read, and exercises in consequence no influence.

"Facts, of course, in our profession are the chief things, and will be valuable, however coarsely or strangely communicated; but it is no less true, that facts, and axioms, and theories in gardening will gain in force in proportion to the terseness and elegance with which they are communicated, and no young writer can expect to realise that elegance and condensation in a first hurried copy of his ideas."

Upon flower-garden plans we would also observe that there is comparatively little merit in merely devising a

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geometrical arrangement of beds—such arrangements can be had in endless variety by the aid of a kaleidoscope; the great merit is in planting the beds artistically.

Some persons are so mistaken as to think that the beauty of a flower garden is enhanced by the multitudinous variety of the forms of the beds. So far is this from being the case, that the beauty depends upon simplicity and just balancing both of the forms of the beds and of the colours which fill them.

Relative to form we may further particularise, that it is a great error to have many points and acute angles in beds surrounded by turf, for such points and angles can never be filled with plants. If the beds are enclosed by tiles or stone edging, such points are less difficult to leave occupied, yet even then curves and circles are always more graceful.

JUDGING GARDEN PRODUCE,

AND OF COTTAGERS' GARDENS MORE ESPECIALLY.

CONSIDERABLE discussion took place some months since about the points of merit which constitute a really good bunch of Black Grapes, Mr. Thomson, than whom it would be difficult to find a higher authority, not giving so much importance to colour as some others would like to do. My purpose, however, is not to revive this question on the mere subject of judging the merits of rival Grapes, but to open the general subject of judging horticultural produce of other kinds, in order that the anomalies which unfortunately now and then make their appearance may be fewer if not done away with entirely.

It is certainly no credit to fruit-growers as a body, that no code of laws deciding the points of excellence to be aimed at has been promulgated; while florists have to a nicety laid down the rules for guiding them on each of the subjects especially under their culture; and as now and then new members are added, like new colonies to an empire, new laws are put forth by which the new accessions have to be governed. Unfortunately, in fruits there is nothing of the kind, each judge sets up a standard for himself, and awards of an equivocal character meet the eye.

It certainly would be worth while some one putting forth a few simple rules indicating what points constituted excellence in a Pine Apple, Peach, Nectarine, Apple, Pear, Plum, &c., as well as in Grapes; and although it is not likely that any law can give all the minutiae in the exact proportions so requisite to each fruit, it is likely that amongst the multitude of councillors a more correct awarding may be arrived at.

Societies formed expressly for the testing the merits of fruits are, nevertheless, unwilling to put forth the rules they act upon in their censorship. That it would be difficult to adopt such rules in all cases is unquestionable, but something like Mr. Thomson's ten points might indicate to the public at large what to aim at in new varieties, or in growing those they already possess. As a suggestion to those who may be inclined to favour us with their views on this subject, I would suggest that the qualifications which constitute perfection might be divided into a tabular form, ten numerals being divided in such proportions amongst the various points of excellence as may be deemed most advisable. Some minor quality might only have half a point, while more important qualities may have two or three. This arithmetical way of acting is certainly the most easily explained, and carries greater expressiveness with it than any other mode that could be adopted.

It would be more difficult to embody anything like the above rules of action into the judging of collections of plants; but collections of fruit might easily be judged by some law analogous to that which governs the adjudication on single specimens. In this case a higher table of numbers might be used, and supposing every fruit exhibited was as near perfection as possible, the award ought to be given to the collection which contains the best specimens of fruits more choice than the others. For instance: Assuming 100 to be the maximum number of merit, and a basket of mixed fruits to be looked at, it would only be fair to place a well-grown Pine Apple at 90 or 95, while a Plum, even if as good as it was possible to grow one, should not stand higher, perhaps, than 15; a Peach, 40; bunch of Grapes, 70 or 80 or more; a Pear, 15; an Apple, 10; and other fruits in proportion to their choiceness and the skill required in growing them.

This is only an ideal approximation of what a really good collection might be estimated at, and the sum total of the figures added together might determine the point between rival col-

lections. Doubtless, some one may differ from me respecting the proportion above given to each fruit, and I am far from certain that it is exactly as I would give it myself when seeing the specimens exhibited; but I throw the hint out as something to found a set of rules upon.

Leaving the subject of the adjudicating on collections of plants to some one else, I will allude to another subject in which much difference of plan exists; and some for the want of any plan at all put themselves to much unnecessary trouble, and yet are liable often to decide more or less erroneously on the subjects they are directed to give an opinion upon.

It is more easy to decide a point of merit between contending objects when they are both before the eye of the censor in one place; but when he has to examine these objects at wide distances apart, and, perhaps, has to determine the respective claims of a score or more competitors, something more than merely carrying all the points of merit of each in the memory is necessary. This difficulty is much increased when the numbers are still larger, and the objects widely scattered. Notes of some kind or other are indispensable, and the simpler such notes are the better, provided they are sufficient.

A method which I have adopted for several years, and which when acting in conjunction with others I have always found them ready to adopt, although simple, may be worth recording in the columns of your Journal, for the assistance of others similarly circumstanced.

The laudable desire on the part of some noble-minded landowners in this neighbourhood, as well as of those whom I have the honour to serve, has for many years evinced itself in the giving of prizes for well-managed cottage gardens and premises, and in several instances shows of horticultural produce have been held and liberal prizes given. At these many of the products exhibited would have graced any show in the kingdom. Of this possibly I may say something hereafter, but it is more especially my purpose to treat on the prizes given for the good management of their gardens, which is a much more difficult matter to adjudicate upon than comparing the contending objects when exhibited together in a tent; and this difficulty is increased when a number of prizes of different values are given, and the gardens are scattered widely apart over a rural district, sometimes three or four together, but often solitary.

In propounding my plan I expect to be charged with a predilection for figures—a charge to which I at once plead guilty, as my plan is based entirely on figures, and in the case alluded to I rarely use any other notes. The way is this:—I place the ideal perfection at 100, and as I have never yet seen anything that in every point reached that position, I fix on the nearest number to it that the merits of the garden seem to deserve. Assuming, therefore, that the vegetable crops are good, the fruit trees healthy, hedges or fences trim, walks tidy, and the whole place in apple-pie order, a quick yet careful survey of the whole will with little practice soon point out to the inspector what number to assign to the holder of that garden, which may, perhaps, be 80, and if the two or three judges agree on the number to be affixed to the first object they inspect, it is likely the difference, even without any knowledge of each other's notes, will be but trifling throughout. Some very indifferent holdings may be as low in the scale as 30, or even less for a dirty disorderly place, while a great number will, in all probability, be represented by between 50 and 70. Still, at the conclusion of the inspection, a short time will suffice to arrange the respective positions of the whole—as A B, 85; C D, 83; E F, 78, and so on; so that whatever number of prizes may be awarded there will be no difficulty in awarding them by a reference to the table-form that has guided the judgment.

I have on more than one occasion assisted to award such prizes in which there were one first prize, two or three second prizes, and a still greater number of a third and fourth class; and also a fifth class has sometimes been added, where the number of recipients of prizes has been, perhaps, nearly one-half of the competitors. Of course each class decreases in value as it recedes downwards; and there may be some who may find fault with making so many prizetakers, but I unhesitatingly say that I entirely agree with it; for local circumstances, as a bad situation and other disadvantages, would make it hopeless for the most industrious and painstaking cottager at one place to compete with another more favourably circumstanced; but while he stands a chance of obtaining a prize he will try to do his best. I believe we have placed as many as eighteen names as winners in a fourth or fifth class.

Although the near or distant approach to 100 denoted the merit of the holding as a whole, I have not unfrequently used the same mode of figure in detail. For instance: A book, or, what is better, a sheet of stout cartridge paper, is ruled in columns for figures—one column may denote fruits, one flowers, one vegetables, one fences, and one the back premises, walks, &c., and a column for total. By entering in each column the respective number the supposed merits of each article indicate, the sum total will determine the position of the whole. This abstract way of doing the work has the merit of enabling the person who looks over the notes at last to ascertain the weak and strong points in each. Sometimes, but rarely, it may be necessary to append a few words as well; but I very seldom do this. A column for cleanliness ought, however, to be added to the above list of abstract ones, and the sum total may be the approximation of that which the whole may seem to deserve, which is better than appending the total number they will represent when all added together. The total absence of flowers ought not to depreciate the merit of the whole to the extent the figures would make it appear, for though their presence unquestionably adds much to the appearance, and ought to have due attention, still, in a cottage garden, they should stand second to vegetables and common fruits. It is, therefore, with a view of giving a just criterion of the condition of the place as a whole that, for general purposes, I would advise only one column to be used; or when more is advisable, nevertheless to let the one devoted to the "total" represent the figure it would do if there were no abstract ones.

Having extended these remarks to a greater length than intended, I have not space to say anything on cottage-garden produce as exhibited at horticultural shows; at another time, however, I hope to do so, and will explain certain features in such things which experience has taught me are not, perhaps, in every case sufficiently attended to. J. ROBSON.

THE ROYAL BOTANIC SOCIETY'S SHOW.

JUNE 3RD.

THE display of plants and fruit on this occasion was not only extensive but excellent, and another great attraction was likewise afforded by the splendid American plants of Mr. John Waterer, which will shortly attain their full perfection when they constitute an exhibition of themselves. The day was extremely warm—so much so as to render a long stay in the tents very oppressive, and the company was large, exhibiting an unusual preponderance of the fair sex.

In Stove and Greenhouse Plants several excellent collections were shown; but as they consisted of nearly the same species and varieties noticed in previous reports, it will be unnecessary to repeat the names of those which have been already adverted to. In the Class for sixteen Mr. Peed, gardener to Mrs. Tredwell, took the first prize with several splendid specimens, both as regards size and symmetry and the profusion of their bloom. Among the most striking were *Allamandas grandiflora* and *cathartica*, *Erica depressa*, *Pimelea decussata*, *Dipladenia crassinoda*, and *Tetratheca ericæfolia*. Mr. Green, gardener to Sir E. Antrobus, Cheam, was second, having his fine *Azalea Coronata*, and *Kalosanthus minnata*, the bright colour of which was very effective. Mr. Baxendine, who was third, had a fine *Coleonema rubra*, *Chorozeema Henchmanni* with an abundance of flowers, and a very fine *Aphelexis humilis rosea*.

In the Nurserymen's Class for ten, Messrs. J. & J. Fraser had a fine *Boronia serrulata*, the scarlet *Clerodendron Kämpferi*, and *Vinca ocellata*, the white and crimson flowers of which were very showy. Mr. Rhodes, of Sydenham Park, was second, and Mr. Outbush, of Barnet, third, both having in their collections good examples of *Phanocoma prolifera*.

The Amateurs' Class of ten was also worthily filled by Mr. Chilman, Mr. Wheeler, and Mr. Kaile. The first had *Aphelexis macrantha rosea* with fine large flowers, *Acrophyllum venosum* in full beauty, *Hedera tulipiferum*, and a nice *Pimelea Hendersoni*. Mr. Wheeler was second, and Mr. Kaile third; the latter having a brilliant *Kalosanthus coccinea superba*, and a nice bushy *Chorozeema Lawrenceanum*.

For collections of six Mr. Page was first; and Mr. J. Tegg, gardener to Baron Hambro', second, having, among others, good plants of *Allamanda Schottii*, *Pimelea decussata*, and *Ixora javanica*.

In the Class for six Fine-foliaged Plants the first prize was

awarded to Messrs. A. Henderson & Co., who had fine examples of *Dieffenbachia maculata*, *Dracaena ferrea*, the splashed-leaved *Alocasia macrorrhiza*, the golden variegated *Croton*, *Caladium Chantini*, *Ananassa sativa variegata*. Mr. Hutt, gardener to Miss Burdett Coutts, was second, and exhibited some of the large specimens which appeared at the Crystal Palace, such as *Latania borbonica*, *Rhopala corcovadensis*, also the curiously carved-leaved *Philodendron pertusum*, *Dieffenbachia variegata*, &c. Messrs. Jackson & Son had the Lace Plant, *Ouvirandra fenestralis*; the curious *Cephalotus follicularis*, or New Holland Pitcher-plant; and a fine *Todea africana*.

Of Cape Heaths the show was also good. Messrs. Jackson and Son took the first prize for ten, among which were *Bergiana*, a beautiful bushy plant completely covered with bloom; *florida*, also fine; and *ventricosa magnifica* and *tumida*, both of them striking plants. Mr. Rhodes, who was second, had *coccinea minor* and *ventricosa magnifica*, and good plants of other kinds.

In the Amateurs' Class for eight, Mr. Peed came in first, and Mr. Page second. Their collections contained good specimens of *florida*, *eximia superba*, *ventricosa magnifica* and *coccinea minor*, and *tricolor Wilsoni*. Mr. Baxendine was third, having also some good plants.

In six kinds the successful competitors were Mr. Chilman and Mr. Wheeler, the latter having *Bergiana*, a fine plant; and *ventricosa coccinea minor*, also very pretty.

Azaleas were not equal to those shown at the Crystal Palace and Kensington, although some of the same plants as shown at these places were recognisable. Mr. Penny, of St. Dunstan's, Regent's Park, was first in the Amateurs' Class, *Juliana* and *Madame Mieliez* being the most noticeable in his collection; whilst Mr. Green was second, the two finest in his six being *Iveryana* and *Præstantissima*, which formed a match pair handsomely grown, but not so well covered with bloom as desirable. Mr. Cross and Mr. Page also obtained prizes, and collections came in addition from Mr. Chilman, Mr. Peed, and Mr. Kaile.

In the Nurserymen's Class, Mr. Turner again took the highest position, his plants putting into the shade those of all other competitors; they consisted of *Juliana*, *Glory of Sunninghill*, *Ex-tranei*, *Chelsoni*, *Iveryana*, and *Criterion*. Messrs. Fraser were second, their finest being *Duc de Brabant*, salmon pink; and *Flower of the Day*, a fine white striped with rose.

Of Orchids, several excellent collections were shown; most of the plants, however, having already appeared at the Royal Horticultural Society's last Show, it will be unnecessary to repeat their names here.

In collections of twenty, Mr. Baker, gardener to A. Bassett, Esq., Stamford Hill, had the first prize. He had several fine *Ærides*, the yellow-flowered *Cattleya citrina*, *Trichopilia coccinea* and *crispa*, besides others previously noticed. Mr. Milford was second; among his plants were a fine *Ærides Lindleyanum* and *Cattleya Mossiæ speciosissima*, very showy. Mr. Peed was third. For a collection of eight, in which were the pretty *Ærides Lobbi*, a fine *Vanda tricolor suaveolens*, and *Cypripedium barbatum grandiflorum*, Mr. Woolley, of Chushunt, had a first prize.

In collections of twelve, Mr. Penny had the first prize, his specimens comprising a fine *Phalænopsis grandiflora*, *Calanthe veratrifolia*, and a noble *Vanda suavis*. Mr. Page was second; *Saccolabium retusum*, *Oncidium ampliatum* major with innumerable flowers, and *Lælia purpurata* being the most remarkable of his plants for beauty. Mr. Green had *Oncidium Lanceanum*, and the *Butterfly Orchis*, and received the second prize.

In the Class for six Orchids some fine *Ærides*, *Saccolabiums*, and *Cattleyas*, were shown by Mr. Wiggins, and Mr. Smith, of Syon.

British Ferns came from Messrs. Ivery & Son, of Dorking, who had a first prize for a collection of twelve, in which were included the elegant feather-like *Athyrium Filix-fœmina plumosum*, *Osmunda regalis cristata*, *Hymenophyllum Wilsoni*, *Scelopendrium vulgare sculpturatum*, and other rare and interesting kinds. A fine collection of seventy kinds was also shown by the same firm. Miss Clarkson received a second prize for her collection, which contained a very fine *Hymenophyllum tunbridgeense*, *Trichomanes brevisetum*, *Asplenium germanicum alternifolium* &c.

In exotic Ferns, Messrs. A. Henderson & Co. were first with a fine collection, comprising *Cibotium Schiedei* and *Barometz*, *Brainea insignis*, *Adiantum tenerum*, and *Cyathea vocoensis*. Fine collections also came from Mr. Lavey, and Mr. Young, Highgate, among which were some noble specimens.

Calceolarias were exhibited by Mr. James, of Isleworth, Mr.

Smith, of Syon, and Mr. Burley, of Limpsfield. Those of the latter were shrubby, and among them Prince of Wales, Dorel, and Primrose Perfection, were fine. The varieties shown by Mr. James, who had the first prize, were nearly the same as at the Crystal Palace.

In Fuchsias, the first prize was given to Mr. Gardiner, gardener to J. Stutter, Esq., Clapham Park, for Madame Cornelissen, Prince William of Prussia, Fair Oriana, Count Cavour, Rose of Castille, and Prince Imperial, all of which were in splendid bloom.

In Pelargoniums, Mr. Turner was first for twelve; Nestor, Viola, Symmetry, Desdemona, Guillaume Severyns, and Fairest of the Fair, being among the best. Messrs. Fraser were second.

In the Amateurs' Class, Mr. Bailey, of Shardeloes, had the first prize, his Lord Clyde and Glowworm appearing the most striking. Mr. Shrimpton's exhibition in the same class was also excellent.

In Fancies, both Mr. Turner and Messrs. Fraser had beautiful collections, taking the first and second places, whilst Mr. Bailey was first in the Amateurs' Class. Delicatum, Lady Craven, Ellen Beck, Crystal Beauty, Clemanthe, and Roi des Fantaisies, were a few of the finest.

Roses in pots were in splendid condition, particularly those from Mr. W. Paul and Messrs. Lane; Chénédolé, Auguste Mié, Lord Raglan, Paul Perras, and Charles Lawson, being some of the finest; and of cut blooms, extensive collections were shown by Messrs. Paul, Mitchell, Hollingworth, and Turner.

Verbenas came from Messrs. Treen, Turner, and Perry, of Castle Bromwich; Pansies from Messrs. Downie, Laird & Laing, Hooper, August, and others; and artificial blooms of the same flower from Mrs. Stoddart, of Victoria Station, which were so like natural ones that most people went away with the impression that they were real.

Messrs. Veitch had a new *Retinospora* with whitish foliage, the handsome *Cyanophyllum*-like *Sphærogyne latifolia*, *Miconia* (?) *argyrea*, and a host of other new and rare plants, which have been noticed elsewhere. Mr. Bull also contributed a large number of new ornamental plants, both as regards foliage and flower, among which were his beautiful new *Mimulus*, a fine Scarlet *Geranium* called Dr. Lindley, *Athyrium* F.f. *coronatum*, and *Chameranthemum verbenaceum*, with very ornamental silvery leaves. Mr. Williams had *Lastrea oreopteris cristata*, recently exhibited before the Floral Committee, as well as a choice collection of fine-foliaged plants. New Pelargoniums were exhibited by Messrs. Dobson, of Isleworth, and Hoyle, of Reading; one from the latter, *Diadem*, was a splendid flower, the lower petals of a fine magenta tinge. A shrubby *Calceolaria* called Bijou, said to be excellent for bedding, and of a crimson scarlet, was shown by Mr. Watson, of St. Albans.

FRUIT.

A considerable quantity of fruit was exhibited, and both as regards size and colour, the quality was excellent. A Providence Pine, weighing 9 lbs. 3 ozs., was shown by Mr. Young, gardener to C. Bailey, Esq., Aberaman, and one of 8½ lbs. by Mr. Bailey, of Shardeloes, both of which received prizes. There were also several from Mr. Jackson, gardener to Lord Scarsdale, one of which was 8½ lbs. Of Queens there were several weighing about 4 lbs. each, and some less; Mr. Barnes, of Bicton, and Mr. Horwood receiving prizes for fruit of that weight.

Melons were shown in considerable number, the favourite sorts being Golden Perfection in the Green-fleshed Class, and Scarlet Gem in the other. Mr. Simmonds, of Mickleham Hall, Dorking, had a fine Golden Perfection; and a very good Egyptian Green-fleshed came from Mr. Tegg; whilst Mr. Bailey had an Orion of 8½ lbs., and an excellent variety, the Trentham White-fleshed, was sent by Mr. Henderson of that place. Mr. Pottle, of Little Bealings received a prize for a small Scarlet-fleshed variety, and Mr. Simmons for George IV. Certificates were awarded to Mr. Bailey for Scarlet Gem; to Mr. Goldsmith for a hybrid, and to Mr. Bennett for Empress Eugénie.

Of Black Hamburg Grapes there were several very fine dishes, the best coming from Mr. Clements, Mr. Turner, Mr. Petch, of Chesterfield, Mr. Hill, of Keele Hall, Mr. Henderson, Mr. Jackson, and Mr. Pottle, all of whom received prizes. Fine baskets were also exhibited by Messrs. Hill, Jackson, and Clements. Fine bunches of Black Prince came from Mr. Hill, and good bunches of the same variety were also shown by Mr. Goldsmith.

Of Muscats, those from Mr. Turner had immense berries, but

not ripe enough; whilst Mr. Clements exhibited some of nearly equal merit, but not so large in the berry, and open to the same objection as regards not being ripe enough.

Prizes were also given to Mr. Hill for Buckland Sweetwater; to Mr. Petch for some fine Chasselas Musqué; to Mr. Drewett, Tenbies, Dorking, for White Frontignans; to Mr. Bailey for Bailey's Muscadine; to Mr. M. Henderson, of Coleorton Hall, for Grizzly Frontignans, to Mr. Hutt, and some others.

In Peaches, Mr. A. Henderson had Royal George, large and finely coloured; those from Mr. Evans being also very fine. Excellent fruit of Grosse Mignonne came from Mr. Turner; French Galande from Mr. Gardiner, and Early Dunmore from Mr. Carmichael, gardener to the Earl of Dunmore at Falkirk.

In Nectarines, the best were Violette Hâtive, from Mr. Petch, who had two dishes, both of which would have had a prize had it been allowable. Messrs. Horwood, A. Henderson, and M. Henderson had also very good dishes of the same excellent variety. Hunt's Tawny was shown by Mr. Turner, and Mr. Robinson, of Englefield. A good dish of the Downton was also sent by Mr. Tegg.

In Cherries, remarkably fine dishes of Elton and Circassian came from Mr. Henderson, of Trentham. Governor Wood, a white American sort, also received a prize. Some fine Reine Hortense were likewise shown, but unfortunately in the wrong class. They were not, however, sufficiently ripe. They came from Mr. Beck, who had also Black Eagle, good; and Mr. R. Wilson, of Warwick, had a prize for May Duke.

Large and very fine fruit of the Oscar and President Strawberries were shown by Mr. Turner; British Queen and Rifleman, by Mr. Pottle; Alice Maude and British Queen, by Mr. Horwood. Excellent brown Turkey Figs were exhibited by Mr. Smith, of Syon; magnificent spikes of Bananas, by Mr. Mart, fruiterer, of Oxford Street; and a large black-spined Cucumber, called William Brough, by Mr. Child, of Norwood.

FORCING ROSES.

It is difficult to select the six best Roses for forcing, there are so many of them; but, in addition to our correspondent "SUFFOLK'S" favourite Baronne Prevost, we may name Paul Ricaut, Edward Jesse, Géant des Batailles, Général Jacqueminot, Jules Margottin, and Madame Laffay. Of Chinese we would add Cramoisi Supérieure, Mrs. Bosanquet, and Fabvier; and of Teas, Devoniensis, Niphotos, Safrano, and Gloire de Dijon.

The success in forcing depends more on management than on kinds, and the two great secrets in management are keeping the plants free of insects, and bringing them on very gradually, never giving them a high temperature, commencing about 45°, and gradually rising to 50° at night, and never more, though a rise of 10° to 15° more will be advisable in sunshine, and with plenty of air.

Summer Treatment.—Presuming the plants have been forced or are potted now, it would be well to plunge the pots during the summer in an open sunny spot, but so that the roots do not go out of the pots, and to be well supplied with mulching and water during the summer. Flowers during summer should not be thought of or valued, and the chief attention should be given to secure healthy even-balanced wood by nipping all the stronger shoots and thinning-out any very weak spray, sturdy rather dwarf shoots to be preferred to long ones; and the nipping of the points of all may take place about the end of August, which will swell the back buds without causing them to start. In September, if the plants are strong and in rather small pots, they may be repotted into larger, using loam three parts and rotten dung or leaf mould one part, adding for Teas a little peat. Duly encouraged, the pots will be pretty well filled with roots before November. If the plants are in pots big enough for blooming, then in the beginning of September examine the drainage, remove surface soil and a little at the side of the pot, and redress with compost rather richer than the above. To have such plants in bloom in January, they should be pruned and regulated after the middle of October, placed in a shed, and kept rather dry until they are breaking, when the plants may be placed in a house in the beginning of November, where they will receive a low moist temperature. If the pots are plunged in a bed of sawdust, or spent tan, so that the roots will average 70° whilst the tops will average 45° to 50°, the plants will come on very nicely if the heads are damped with the syringe.

In pruning in summer, care should be taken not to start the lower buds; but if some of the Perpetuals are thus started in autumn—as *Géant des Batailles*, &c., and the bulk of the Chinese—and the top old shoots are merely pruned away, these young shoots will bloom in ordinary greenhouse temperature without getting any heat worthy of the name of forcing; and by this means, with little trouble and preventing blooming in summer, most of the Chinese section and the hardier of the Teas would bloom all the winter in a temperature averaging from 45° to 50° at night. In pruning in autumn, weak growers should be cut pretty close, and strong growers should have the weak twigs either removed or pruned back to a bud; the stronger well-ripened shoots should merely be stopped a little and bent a little so as to cause the buds to break regularly.

In winter water should be given only as the plants need it, and never lower in temperature than that of the house. As the leaves expand freely and the buds begin to show, weak manure water may be given alternately with clean water. Very little water will be required until the young shoots are fairly started.

Successions will be easier managed than the first lot of early ones. When the plants are done flowering they should be protected in a cold pit until they can be put out of doors in April and May.

The more air the plants have after they are started the better, provided the air is moist and mild; but in winter in very sunny days, when the air is frosty and parchingly dry, it should not play on the young foliage or buds until it has been heated and moistened; and hence, under ordinary circumstances, it will often be better to shade a little, and damp the floors and stages in such cases instead of giving a great amount of air.

In most cases a little green fly may be expected, and smoking is the best remedy, though some prefer drawing the shoots affected through weak tobacco water and syringing with clean water the following morning. There are also two opposite evils to be guarded against: If the air should be harsh and dry the leaves may have a visit of the red spider, and moisture and the syringe and not too much heat are the preventives. The other is mildew if the weather should be very foggy and moist; and the remedies are dusting with sulphur, but chiefly a little dry heat, to disperse the fog and promote a brisk circulation of air.

Does your *Cyanophyllum* stand near the heating medium and where there is an evaporating-trough? If so, and the plant get very dry, the leaves would be browned. We have also seen a plant a little affected in the same way from the sun beating on it fiercely, when the leaves were damp and air had not been given soon enough in the house.

R. FISH.

FLORISTS' FLOWERS

AT THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITION.

MAY 27TH.

"*Iterum, iterum, iterumque*," one may indeed cry out at this the third great Exhibition held in the merry month of May. From the Regent's Park to the Crystal Palace, and thence to Kensington, has been the lot of many an *Azalea*, *Pelargonium*, and *Rose* this season; until at last we should think, "blushing and suffused with rosy tint" must be descriptive of them all, if they can hear the loud praises bestowed on their personal charms. "What a lip!" "What a lovely form!" "How delicate!" "Did you ever see so charming a colour?" heard on all sides from gallant cavaliers and fair maidens—bestowed by royalty, nobility, commoners, and the *bourgeoisie*, must surely have been too much for even the native modesty of *Flora's* fair subjects, and leaves but little after the detail I gave of the Crystal Palace Exhibition for me to say. What can I say, for instance, in *Pelargoniums*, but that Mr. Turner with the selfsame plants took as usual first prizes, and the Messrs. Fraser a good second—that the *Roses* of Messrs. Lane and Mr. Wm. Paul were again very nearly matched, but that the freshness and novelty of the latter's gained for him the first place—that *Tulips* and *Pansies* not coming within the patronage of the Society were absent, with the exception of some sent by one or two growers for sale—that the same seedling *Pelargoniums* were there as at the Palace, and placed very much in the same position as they were then placed?

There were, however, two collections, which, although not amongst florists' flowers, were to my mind as interesting as anything there—Messrs. Ivery's collection of British Ferns, and Mr. Salter's of variegated plants. Anything more delightfully fresh than the former collection it is impossible to conceive;

and I question if a collection of exotic Ferns would exhibit more beautiful and varied forms than did this of native species. Messrs. Ivery are so well known for the magnificent collection in their possession, that we need hardly say that rarity and excellence of cultivation characterised their productions. I noticed amongst them especially the following:—*Asplenium marinum*; *Allosorus crispus*; *Athyrium Filix-femina apuense*, crispum, depauperatum, diffusum, Fieldiae, Frizelliae, molle incisum, multifidum, plumosum, thyssanotum; *Ceterach officinarum*; *Cystopteris fragilis*; *Lastrea Filix-mas crispa, cristata, incisa, Jervisi*; *Osmunda regalis*; *Polypodium dryopteris*; *Polystichum angulare proliferum*; *Scolopendrium vulgare crispum, endiviatifolium, fissum, multifidum, ramosum, corymbiferum majus*. In Mr. Salter's collection of variegated plants were *Funkia undulata variegata*; and variegated forms of *Acer negundo*, *Hedera helix*, *Ruta graveolens*, *Scrophularia nodosa*, *Hesperis arabidæfolia*, *Tussilago farfara*, *Salix caprea*, *Spirea ulmaria*, &c. This collection was also a hardy one, and thus suggested how much may be done in adorning our gardens with this section of ornamental-foliaged plants.

As there are many who are interested in the *Pelargonium* I give here the names of the winning plants, although it is nearly a repetition of those of the Crystal Palace. Mr. Turner was first in 12 Show *Pelargoniums* with *Fairest of the Fair*, *Roseum*, *Desdemona*, *Bacchus*, *Rose Celestial*, *Guillaume Severyns*, *Sunset*, *Lady Taunton*, *Viola*, *Empress Eugénie*, *Candidate*, and *Picnic*; the Messrs. Fraser second with *Carlos*, *Desdemona*, *Sir Charles Napier*, *Sanspareil*, *Roseleaf*, *Leviathan*, *Mr. Mar-nock*, *Etna*, *Ariel*, *Festus*, *Saracen*, *Empress Eugénie*. Amongst Amateurs—for Fancies, Mr. Weir, gardener to Mrs. Hodgson, the Elms, Hampstead, was placed first with *Delicatum*, *Lady Hume Campbell*, *Madame Sontag*, *Emily*, *Carminatum*.

In Fancy *Pelargoniums* Mr. Turner was again first with *Cloth of Silver*, *Roi des Fantaisies*, *Lady Craven*, *Clemathe*, *Delicatum*, *Ellen Beck*; and the Messrs. Fraser second with *Aeolus*, *Celestial*, *Clara Novello*, *Cloth of Silver*, *Bridesmaid*, and *Multiflora*.

Messrs. E. G. Henderson and Mr. Bull sent collections of new hybrid *Mimulus* and *Zonalis Geraniums*. Amongst the Messrs. Hendersons' were some pretty tricolor-leaved varieties—*Italia Unita*, *Sunset*, *Mrs. Pollock*, and *Countess*. Mr. Standish again had his new Japanese *Clematisses*; but novelties were, as you justly said last week, not very numerous.

What, then, about the Exhibition as a whole *per se*, and as compared with the others of the season? This must be a matter of taste; but for beauty of appearance I question whether the palm will not be universally given to the Royal Botanic Society. And as to the plants there can be but little difference: the same exhibitors and the same plants are to be noticed at all of them, and arrangement must decide the preference. It seemed to me to be a great mistake, for instance, not to have had a slight covering of tiffany over the plants. It need not have been an awning; but a semicircular canopy springing from the back of the stages, and just reaching over the plants, would have greatly improved their appearance; for not only did the light deaden the colours, but the immense size of the building dwarfed the plants. A slight tiffany shading would have neutralised these effects. The wideness of the nave gave an excellent opportunity for moving about, which was increased considerably by the, to my mind, unfortunate arrangement of separating the music *in toto* from the flowers. If one band had been stationed at the majolica fountain, and the other left in the gardens, it would have enhanced the Exhibition vastly, instead of, as it did completely, cutting the matter in two.—D., Deal.

REDISCOVERY IN ENGLAND OF TRICHOMANES RADICANS.

Will you afford me space in your Journal for the announcement of my having discovered the *Trichomanes radicans*, or European Bristle Fern, in the neighbourhood of the Snowdon range in North Wales?

This may be interesting to your readers who take pleasure in the cultivation of Ferns, as there is no record of its having been found in England, Scotland, or Wales since the year 1782, in which year it was found at Bingley, in Yorkshire.

The only recorded habitats of this beautiful Fern which bring it within the category of British Ferns are some few places in the lake district of Ireland and in the county Wicklow.

For reasons which you will readily understand I am unwilling to indicate more precisely the habitat I found.

The plants, of which I secured several young specimens, are remarkably fine, the fronds in many instances being from 12 to 18 inches in length; and as a justification of my having disturbed it I may say that it was very abundant in the spot in which I discovered it.

I shall be glad, if you think it necessary to verify my statement, to send you a dried frond.—JOHN F. ROWBOTHAM, *Town Hall, Manchester.*

SAM SLICK'S GARDEN.

I MUST add my testimony to that of "A FRIEND TO FLORICULTURE," in your Number of the 12th of May, when he alludes to the flower garden and grounds of the Hon. Mr. Justice Halliburton (the renowned Sam Slick), at Gordon House, near Isleworth. I accidentally visited this place in the summer of 1862, and I would advise both lady and gentlemen amateurs to ask permission to do so, which will be courteously granted.

The arrangement and planting of the flower-beds is a perfect study, and I will in a future Number venture on a brief description. The success of these gardens is, I am told, entirely owing to the taste and industry of the fair owner, who with very limited assistance (two men and a boy, I understood), continues to keep in perfect order 6½ acres of flower and kitchen garden.—A CONSTANT SUBSCRIBER.

NEW BEDDING GERANIUMS.

THERE are very few of your readers who do not regret the absence of Mr. Beaton's articles from your Journal. Those of us who are interested in the cross-breeding of flowers, especially bedding plants, have felt disappointment as week after week your Journal has appeared on our tables, and no lively pleasant page with the well-known signature at the bottom. Though personally unknown to me, I for one desire to express my regret at the blow by which, I hope only for a time, Providence has deprived floriculture of one of its most learned professors. It is not many months ago that Mr. Beaton announced in your pages his possession of a variety of seedling Geraniums of all colours except yellow, that he hoped to obtain even that, and as yellow as a buttercup, and that already he had one of a true orange. It was by the aid of his very accurate article in your Journal, descriptive of the bedding-out at the Crystal Palace, that last August I was able to find out all the novelties which he had sent to be tried there. That same article, by-the-by, sent me on a fool's errand, for no sooner had I seen the Crimson Minimum and Lord Palmerston, especially the latter, than off I went to the nearest nursery in hopes of obtaining both. But I was told at once, "Oh! you are too fast, sir, by a year or two; those Geraniums are only sent for trial, and won't be in the trade for, perhaps, a year or two." That same Lord Palmerston, however, has appeared this year, and if I mistake not, I have also the Crimson Minimum of the Crystal Palace. I bought it last year of Messrs. E. Henderson & Co. under the name of Minimum Nosegay. Lord Palmerston is a magnificent Geranium. There was, I believe, only one bed of it last year at the Crystal Palace, on the east side of the Rose Mount—one of the round beds—it caught my eye directly. Its colour is very bright, and the trusses are absolutely immense. For large beds and where a strong and attractive effect from a distance is required, it is the finest of the whole breed. I confess, however, to a weakness in favour of a more dwarf style of growth. If such a truss as Lord Palmerston could be obtained on a more prostrate-growing and shorter-jointed Geranium, I should say that, so far as that colour is concerned, we had reached perfection. Now, Mr. Beaton mentioned a seedling of his which, as far as my memory goes, was to beat anything—Cybister or The Tumbler was, I think, the name. I want it for breeding from. Now, who has that? Is it only in Mr. Eyles' or Mr. Gordon's keeping yet? I do not see it in any catalogues. The Crimson Minimum is the Geranium which Mr. Beaton himself recommended to Mr. Fish in preference to Stella; and it is superior to Stella in my opinion, because though the colour is much the same as also the truss, the habit is very much shorter-jointed and dwarfer. In the mass, therefore, you would have more flowers.

From the nursery to which I went for the purpose of getting Lord Palmerston and Crimson Minimum—viz., Messrs. Carter

and Co.'s, Crystal Palace Nursery, I have received this spring—Lord Palmerston, Spread Eagle, Merrimac, and Miss Parfitt. The last three, especially Spread Eagle, are apparently very dwarf. Can any one tell me if any of these last three is Cybister or The Tumbler? I know nothing about their flowering capabilities or their habit of growth; but they appear, as most of the new Nosegay section do, to have a close relationship to the Crimson Ivy-leaf Geranium.

And now I have a secret to reveal which, if this should meet Mr. Beaton's eyes, will, I hope, give a fillip to restoring his health. The desire of cross-breeders, in one direction at least, has at last been produced. It may be seen at Messrs. J. & C. Lee's, Royal Vineyard Nurseries, Hammersmith. Having an hour to wait for the train at Kensington, I strolled into Messrs. Lee's delightful nursery. In one of the smaller span-roof houses devoted to bedding Geraniums I saw, I could scarcely believe my eyes, a white variegated Geranium with a white flower. "Five guineas for a plant?" "No, sir, it is not for sale."—F. M. ADEY, *The Cell.*

[The Editors will be readily believed when they say that no one feels more deeply than they do the illness which has withdrawn Mr. Beaton from their side. They hope it is only a temporary withdrawal, for Mr. Beaton is better in health, yet some time must still elapse before he can resume his pen.—EDS. J. OF H.]

FAILURES IN A VINERY.

HOT-WATER PIPES REQUIRED FOR HEATING A VINERY AND CUCUMBER-HOUSE.

I SHALL be obliged by your giving me your opinion on an alteration I intend making in a vinery, and also on the addition of a Cucumber-house to vinery. Three years ago I built what was intended for an "orchard-house" 20 feet long by 12 wide, lean-to, brick sides and ends, fixed roof, ventilation at front and back. Inside the house is 8 feet high at back, 3 feet in front, with a sunk path in the middle 2 feet wide, leaving the borders 5 feet wide. Partly from the ground being raised outside and the house built on very low ground, the surface of the border is quite 2 feet below the level outside, which I believe makes the border cold and damp. In May, 1860, I planted three Black Hamburgs at the end, which is nearly north by west, the house facing south-west. The Vines have made good growth. This is the first year of bearing, and I have about forty bunches. Many of the berries have the spot, and are becoming gangrened, to remedy which I would propose in September carefully lifting the Vines, which are inside the house, and there is no means for the roots to go outside; to remove the soil down to the stone rubble, &c., at bottom of border, to place a hot-water pipe there, well covering it with rubble; and to remake my border, and have it as high as the outside ground; also to make a border outside in front for the roots to run through the arches. I presume the mischief arises from want of root-action.

In 1861, at the south-east end, I planted three Muscat of Alexandria Vines, but they have made but very little growth. Would they answer better planted in the centre of border as Sanders recommends? In the event of my moving them, would it not be best to plant them in front, to do away with centre path, and to put it at back of house?

At the north-west end is a brick pit with six lights, so I cannot allow the Vines to run out there; and at the south-east end I wish to join the Cucumber-house. The Cucumber-house to be 12 feet long by 9 wide, with a kind of hip-back or half span-roof, glass in the front under the eaves, and brick at the back, and glass end at south-east—path 3 feet wide in centre, border on each side 3 feet wide, to be heated by hot-water tank. What size pipe must I use to heat Vine-borders, and how many pipes to heat the house? Also, what pipes to heat Cucumber-house?

I wish one boiler to do the whole heating, and to be placed at the back of the two houses. Will you be kind enough to advise me? What I require to heat is not of any extent, and another thing to be borne in mind is that the gardener has never had experience with hot water.—EDGARLEY.

[We do not think that your Vines need have suffered if the ground had been properly drained, though it will be an advantage to have the inside ground equally high with the outside. We should never think of planting Muscats in a mere orchard-house. They could only ripen in a fine sunny summer and autumn. Your Hamburgs may be suffering as much from deficient venti-

lation as deficient root-action; but if you are satisfied that the latter is the cause of disease, the lifting and replanting will be in their favour, and the same may be said of the Muscats. We do not know if you intend your house for forcing early. If so, the pipes below the border will be a great advantage, but if you let your Vines come on nearly naturally you will require no pipes below the roots. If you raise the inside border we presume you mean to raise the house as well, as from 5 to 6 feet is no great height. It matters little where the Vines are planted, whether at the front or more in the centre, with pipes below. We would prefer the centre, though it is of little consequence.

For early forcing you would need two four-inch pipes for bottom heat, and at least three four-inch for top heat. Less would be required if you commenced in March or the end of February. As to boilers, the simplest tubular or saddle-back will suit your purpose. Our own opinion is, that for continuance there is little difference between boilers if properly set and properly wrought. We have little faith in the wondrous tales some people tell us when under the influence of enthusiasm. If you want Cucumbers in winter and early spring you will need two four-inch pipes for bottom heat, and the same for top heat; if in May or so three-inch pipes will do. Your best plan would be to have a boiler sunk deeper by a foot or 18 inches than you wish the pipes for the border to be, take the one flow-pipe to an open cistern, and from that take a pipe to all the places to be heated, each of these joining the return-pipe to the boiler.]

LIFTING APPLE TREES FREQUENTLY.

WILL it be possible or convenient to you to let this meet the eye of "C," who wrote a very interesting account of his dwarf Apple orchard, which was published in No. 636 of the COTTAGE GARDENER AND COUNTRY GENTLEMAN, December 4th, 1860? I will accept it as a great kindness if he will favour me with the information—which will, no doubt be valued by other readers—whether the mode of lifting his trees biennially after about nine years' experience is still satisfactory, and if they bear well with it, but more particularly whether it has prevented canker from appearing in his Ribston Pippin Apples; the main drift of my writing is to learn that.

Last autumn I planted a portion of my garden with a number of Apples and Pears on the Paradise and Quince stocks, and amongst the number one Ribston Pippin. I wished to have had more, but was afraid of the canker, for a few years ago I lost a nice Hawthornden Apple tree from the same cause. The Ribston has never been grown in this neighbourhood that I am aware of; but as the Hawthornden cankers in my soil, I fear the same will happen to the Ribston, unless a periodical lifting of the tree will prevent the disease, as some assert it will. My soil is nearly like that of "C.'s" garden. If the annual or biennial removal of that valuable Apple will prevent the canker in wet soils and induce fruitfulness, it is information which ought not to be hidden—when practically proved—from us Lancashire people, who cannot grow to perfection the finer fruits, such as Peaches, &c. An answer to my questions I doubt not would be very valuable information to many amateur gardeners whose garden soil is wet, and the major part is I believe so. As I wish to fill all available space in my garden this autumn, will he please to state, now that his trees must be by this time pretty well grown, whether 3 feet by 4 is sufficient room for his dwarf trees? Mine is a small garden, and I want them kept in little compass. I never had the pleasure of seeing a full-grown orchard of dwarf trees, so I have but little idea what space they require when matured.—A. Q., *West Houghton*.

RAINFALL AT LINTON PARK, KENT.

A CORRESPONDENT having inquired how the rainfall of the past three months corresponds with that of similar periods in former years, I have been induced to give the following table, taken from a register kept here, by which the deficiency of the rainfall in the present season will be easily seen. I may further add that the rainfall of May up to the 29th has been 1.59 inch, and falling in eight days. The greater part of this fell on the 19th, 20th, and 21st, and was accompanied at that time with a very cold north and north-east wind, which was also strong and proved very hurtful to vegetation. The windward side of forest trees in full leaf has been bruised and destroyed,

and now looks as if scorched; delicate things, even when sheltered, suffered more or less. The cold continued several days and nights. The night of the 25th-26th May was unusually cold, the thermometer sinking as low as 35° in the garden, and in some exposed places in the park it was quite a frost. There have been various changes of wind, that from the S.W. not having been always so mild as could be wished. The general opinion is that the rain of the 20th only benefited the more hardy vegetation, the cold by which it was accompanied neutralising its otherwise useful properties. At the present time (the 29th), the atmosphere has more of a summer character; but extreme changes have been so common of late that it is impossible to say what may next follow.

	1855.		1856.		1857.		1858.		1859.		1860.		1861.		1862.		1863.	
	Rain in inches	No. days' rain.	Rain in inches	No. days' rain.	Rain in inches	No. days' rain.	Rain in inches	No. days' rain.	Rain in inches	No. days' rain.	Rain in inches	No. days' rain.	Rain in inches	No. days' rain.	Rain in inches	No. days' rain.	Rain in inches	No. days' rain.
January	0.47	15	1.82	19	3.13	21	0.79	9	1.61	11	2.87	18	0.38	5	1.75	16	2.12	20
February	1.24	14	1.12	11	0.27	6	0.77	9	1.17	11	1.40	16	1.82	18	1.05	11	0.93	15
March	1.69	17	0.99	11	1.27	12	0.87	9	1.66	9	2.61	20	2.46	19	3.90	21	0.77	11
April	0.26	5	2.89	17	1.76	16	1.93	11	1.89	14	2.84	15	0.97	6	1.80	13	0.72	10
May	2.23	12	4.08	18	1.06	9	2.16	13	2.22	10	3.12	15	1.19	6	2.23	14		
June	1.21	11	1.26	9	1.67	7	2.66	3	2.75	7	5.09	23	3.14	15	2.29	19		
July	3.23	13	2.48	18	1.07	8	2.63	16	2.75	10	2.07	13	3.25	17	2.72	16		
August	0.71	7	2.63	13	2.93	12	1.29	9	2.13	10	3.04	26	0.93	10	2.50	10		
September	0.94	9	3.61	16	5.41	16	1.19	10	2.33	18	3.36	20	2.16	13	1.93	14		
October	4.19	28	1.93	12	3.12	13	1.45	9	4.28	18	3.36	20	0.89	13	1.30	24		
November	2.65	17	2.58	12	2.15	11	0.77	10	3.67	13	2.67	17	1.72	17	1.30	17		
December	1.93	12	2.71	15	0.49	6	1.91	14	3.82	18	2.38	17	1.72	17	2.11	20		
Total	20.84	160	27.79	169	24.33	137	16.33	116	29.55	151	33.86	216	24.01	153	26.93	195		

JOHN ROBSON.

JOHN ROBSON.

HAS THE CLIMATE OF ENGLAND CHANGED?

WE are induced to take up this subject from the fact of hearing very lately, whilst in the west of England, more than one landowner express in most decided terms his opinion on the deterioration of the weather—an opinion that we conceive to be very injurious to the best interests of the country.

In this note we intend to confine ourselves to an investigation of the temperature. In a former article, on the rainfall of England (*Mark Lane Express*, April 28, 1862), we showed that there had been no increase in the annual amount of rain during the past forty years.

The following mean temperatures of every year since 1815, grouped in ten-year periods, exhibit no signs of any change: there are merely the ordinary fluctuations, some above and some below the average, that are evident in all statistical tables of this nature, where the series is not long enough to obliterate the effect of individual exceptional cases.

In this and the subsequent tables the whole period—viz., from

1815 to 1860, has been divided into four ten-year periods and one six-year group. By including ten years, the extreme jumps of temperature between one year and another partially disappear; whilst the five mean groups are ample to show that no radical change has taken place.

We might have gone back much further, but were unwilling to admit any evidence on which we could not place the most perfect trust; and thermometer readings anterior to the commencement of our table we did not consider so accurate as those of the later date.

The mean temperature of the ten years from 1815 to 1824, both inclusive, was 49.8°, for the next decade it was 50.4°, for the following 49.2°, then 49.8°, and for the six years it was 49.0°. Here we perceive no difference to any material amount, and we might for all practical purposes consider the readings to be identical, which, were the series sufficiently long, no doubt they would be.

But, it may be remarked, if the winters have become warmer and the summers colder, no difference may be shown between the yearly average temperatures of one ten years and another; although the effect of such a change in the seasons would be of the utmost moment to the progress of vegetation. True! and to guard against this error, let us examine each month, taking the mean of every ten years for each month of the year; we shall then see if the individual months have altered at all, or if, on the contrary, each has received, on the average, its normal amount of heat.

Table showing the average monthly temperature in ten-year groups, from 1815 to 1860 inclusive:—

Years.	Jan.	Feb.	Mar.	Apl.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1815 to 1824...	38.1	40.1	43.2	47.2	53.0	58.2	61.1	61.5	59.0	50.8	45.5	40.4
1825 to 1834...	37.3	39.9	43.0	48.0	54.6	60.2	64.0	61.6	57.2	52.1	43.9	42.5
1835 to 1844...	37.8	38.8	42.4	45.9	53.2	59.1	61.5	61.9	56.9	49.5	43.9	40.0
1845 to 1854...	39.2	39.7	41.2	46.2	53.1	59.0	62.3	61.0	56.6	49.5	44.3	40.4
1855 to 1860...	38.1	37.8	41.3	45.7	51.9	60.0	62.4	62.4	57.1	51.4	41.7	39.2

Looking over this table, the eye fails to discern any approach to a descending tendency, or, indeed, to discover any periodicity whatever in the results. Here is a number above, there one a little below the average, but nothing to indicate any regular march either of increase or decrease.

If it be necessary, let us make out another table, in which we will calculate the average temperature of the seasons for each decade. The following will then be the statement:—

Table showing the average temperature of the seasons, in ten-year groups, from 1815 to 1860 inclusive:—

Years.	Spring.	Summer.	Autumn.	Winter.
1815 to 1824.....	48.5	57.4	57.1	41.3
1825 to 1835.....	43.7	59.6	57.0	40.2
1835 to 1844.....	42.7	57.9	56.1	41.6
1845 to 1854.....	42.4	58.1	55.7	41.3
1855 to 1860.....	41.4	58.1	57.0	39.7

Here is a striking uniformity between the mean temperature of one decade and another. Were the series sufficiently long, we have no hesitation in saying that even these slight inequalities, which exhibit no law amongst themselves, would disappear, and the number expressing the temperature of either season for such a period would be identically the same for all averages including the same number of years. It is needless to remark that, in compiling tables of this kind, the most rigorous exactitude is required: one false reading would throw a doubt over the entire table, as would also a single inaccurate observation.

To sum up in a few words, the only conclusion we can arrive at is, that there has been no alteration in the temperature of this country, nor have the seasons changed their characteristics. "Seed time and harvest" have never ceased nor exhibited any tendency to encroach one on the other; the laws of meteorology are as stable as those of astronomy, and the regularity of the heavenly bodies is not more strictly maintained than that of the recurrence of the phenomena of climate. We shall be glad to see the popular error, that the winters are warmer and the summers colder than they used to be, fade and die out; such a belief is calculated to do much harm, and therefore, on the ground of expediency, should be thrown aside, even if the bare recommendation that truth always brings with it were not sufficient to secure a place in all men's minds.—(Mark Lane Express.)

ALYSSUM SAXATILE COMPACTUM.

DURING the month of April, when riding on one of the omnibuses which run from the town of Leeds to the out-townships, I saw in one of the villa gardens which line the road some plants of *Alyssum* quite different from any which I ever saw before; their dwarf growth and close compact-flowering habit was quite the reverse of the plants in my garden at home. Thinking that the soil had something to do in the matter, and not being able to make inquiry on the spot, I allowed the thought of them to pass out of my mind. Since then, when on a visit to Shipley, near Bradford, walking with a friend past the Shipley Nurseries, and having a few minutes to spare we walked into the nurseries. Here, again, I met with the dwarf plant, labelled *Alyssum saxatile compactum*, in full flower, the flowers quite covering the leaves, and forming an object very pleasing to look upon. The grower of hardy herbaceous plants will not make a mistake in growing this early spring-flowering plant, and the bedder will do well to grow this shrub in his beds at a season of the year when they are naked and dull. It is a plant which must be a favourite, even if it to some growers be an old favourite. I would have secured some plants, but Mr. Dean was engaged with some customers, and the short time allowed me having rapidly flown away, I was forced to hurry off empty-handed.—RUSTIC ROBIN.

HEATING GARDEN STRUCTURES.

(Continued from page 401.)

FLUES.—In houses of some size—say 36 feet by 18 feet, where a forcing temperature is required to be kept up, two flues are required; the one, a single flue, takes the front, and the other makes two or three journeys along the back. The flues here are constructed of brick dished in the middle like a press-brick, but the hollow penetrates fully an inch into the brick. Three of these placed on edge form the sides of the flue. The bottom of the flue was formed of bricks 15 inches square by 2 thick, and these were laid on a single thickness of common brick at the joints of the flue-bottom only. These bearers were laid on a foundation of bricks levelled with the plumb-bob. The covers for the flue were 15 inches square by 3 thick, dished out like the side bricks, and would hold when filled nearly three pints of water each. The flue at its entrance into the house was formed for a yard of fire-bricks at the sides and top, and then fire-tiles were used for covers a yard further, which part was entirely covered by flagstones to prevent the heat from scorching the plants in the vicinity. Bear in mind this was the front flue passing along both ends and the front of the house. The furnace was 2 feet 3 inches long, 1 foot 3 inches wide, and 1 foot 3 inches high above the grate. It was built entirely of fire-bricks, and the top was arched. The top of the furnace was level with the bottom of the flue, so that the smoke or heated air rose 1 foot 3 inches from the fire, after which it went at a dead level, and rose no more until it entered the chimney. The flue at the back of the house was similarly constructed, only it went three times along the back, and like the front flue was covered with dished bricks. In the hollows water was poured when a moist heat was desired, and pieces of stone were placed therein, on which pots containing Orchids were placed. I have seen some very fine plants of *Bletia Tankervilleæ*, and other old-fashioned Orchids, grown in this manner, and French Beans were regularly forced, the pots being placed on a wooden trellis made on purpose. Some of the finest *Amaryllises* were grown on the front flue, and no place was ever more calculated to suit them than this. The plants were in the midst of a moist atmosphere when growing, and literally baked when at rest. The position was marked out by Mr. Herbert, of Spofforth, near Wetherby, as a fit and proper place for that tribe of plants, and I believe the greater part of the plants were had from him. I regret to say that they have lately been thrown away as unworthy of a place amongst so many fine plants as we have at present in our hothouses.

Now, those flues were made about 1820, the houses being, I think, completed in the autumn of 1821; and they cost £9 11s. the pair, labour and everything being considered. Five of such houses with similar flues were put up at the time, so that the cost of the heating apparatus alone was £47 15s. The range was divided into four Pine-stoves and a vinery. There were Vines in three of the other houses.

Fine Grapes were grown in those houses, specimens of Black

Hamburgh weighing 4 lbs. per bunch, the berries as large as moderate-sized violet Plums, and quite as black. Pines, too, were grown there of large size, some Providences weighing 6, 7, and 8 lbs. commonly, and in one instance 9 lbs. 11 ozs.; Queens, Montserrat, Antiguas, Sugarloafs, Black Jamaicas, and others, were proportionately large, and this thirty years after the houses were built. The flues had not cost more than 10s. each annually in sweeping and repairing during that period—that is, on an average. The account-books verify this statement, and I may finish the Cr. part of the business by stating that the same flues were in successful operation in 1858, the last time I saw them, and plants certainly did come out of the houses that year which won first prizes at the autumn show of the York Horticultural Society. In the Dr. account of the flues in question, I find £26 10s. worth of coals consumed annually, and £15 worth of tanner's bark, or, in all, £41 10s. as the cost of heating. The coals were brought by water some sixty miles, and the tan came nearly twenty miles by the same means. In the thirty years seven flues had burst, destroying something each time, and the soot in the flues took fire times out of number, and subjected a plant or two to a roasting temperature. I mention these flues to show what a flue was when they were in their prime, when gardeners considered how to build them so as to meet their wants.

Pausing for a moment, I will tell of another kind of flue erected in 1830 and now doing good service. At this period they ran all their flues horizontal, and not as some people do now—rising from the fireplace with one end on the floor and the other on pillars, as if the flue were too proud to lie and too idle to stand. Well, the flue in question was built of common bricks placed on edge; the bottoms and covers were clay tiles made on purpose, 2½ inches thick. On the top of the flue a brick was laid edgewise parallel with each side of the flue, and on those bricks a flagstone for a shelf or table on which to place the plants. In the stone shelves openings were cut so as to let the heat out of the chamber below into the house, 3 inches by 1 foot, and a foot apart. By this plan the house was not soon heated nor the plants roasted. I have seen good Grapes—nay prize Grapes—grown in the house where this flue worked.

But a flue as it is built now, what is it? More frequently a failure than a success. I have had a flue boiling water in a saucepan after it has traversed across one end of the house, melting lead where it entered the house, whilst at the other end next the chimney it was neither warmer nor colder than a lamp-post—so much for the absorbing powers of brick. And all that heat to keep out an ordinary winter's frost! I have grown Ferns, stove, and greenhouse plants with flues, ripened Grapes and other fruits with them, and given satisfaction to my employers; but I do not like flues for several reasons—a few of which are: They consume more fuel, require more attendance than hot-water boilers, are soon hot and soon cool, dry the atmosphere too much (causing it to be saturated at one end with moisture, whilst it is like that of a malt-kiln at the other), emit sulphurous vapours inimical to vegetation, are liable to get out of repair, and are sure some time or other to blow up, or something will happen to cause unpleasantness to all concerned. Besides, when a flue becomes aged the mortar decays and the smoke is apt to follow a new route. See your plants are suffocated, and you feel that you are to blame for it—neglect has done it! A gardener cannot always find time to examine a flue; and, if he has the time, I very much doubt whether he can detect a flaw in time to save his master's plants. I never could. I never could tell when a brick was mouldered away out of sight at the back of a flue, nor tell when an ill wind would rise. I like flues at a distance, for I never felt sure of carrying my plants successfully into specimens nor my fruit to maturity, and when confidence in one's self is gone the worst place to look for something to cause a return of it is a rickety old flue. We very often hear it stated that flues are cheaper than hot water, and are more easily tended—that is, any sort of a bungling fellow can mind a flue furnace, but it requires one with some skill to attend a boiler. This is the reverse of fact. A flue furnace requires double the care of a boiler furnace, and this peculiarity alone is a point in fact much against flues.

I remember having fourteen flues to attend to, and I know there was trouble enough with them, and at times as many as twenty-two fires fell to my lot. In winter those fires were to look at every morning at six o'clock, to stoker; if out, to light, which with the aid of a labourer occupied at least half an hour. Then the temperature of the houses must be seen; but it often had to be taken before the fires were touched—that is, before

six o'clock, a piece of extra work falling on the young man. Of course a minimum temperature must be had at that time within a few degrees, a few too low being better than many too high; but if the temperature was wrong the head-gardener was sure to come blustering, though he was silent as most when all was square. Then some of the fires would want touching up again before breakfast, some requiring an extra touch, and then you could get your breakfast as content as a king. The fires would now do until noon, or in bright days until 3 or 4 P.M., when they must be revived, and worked up into going order by 6 P.M. At 8 P.M. in ordinary weather they were made up for the night. In severe weather they require attendance at 10 as well; but in very severe weather a poor fellow must sit reading marks on the wall in the dark, with no light but a fire, and no books but your own purchased out of a paltry 10s. per week, after satisfying the craving of the stomach of a growing lad. You must trudge knee-deep in snow to look at the conservatory fires half a mile away; and then after a walk home meeting nobody, and seeing as little, you begin to muse, until, startled by the cry of a bird as solitary as yourself, you hasten to throw a few coals upon the fires without inquiring whether Pines, Vines, and the plants are too hot or too cold, and thus you manage to get to bed when your watch marks I.

So much for flues and the little skill and attendance they require. The cost of a flue depends on circumstances. Prices of materials vary in different parts of the country, and carriage forms an item that cannot well be estimated. The size and the purpose for which the flue is intended is another consideration, but to heat a house 21 feet by 15, to be kept at greenhouse temperature, it is necessary to have one flue all round, or at least along two ends and one side, or in front, if a lean-to, and by all means all round if a span.

Fire-grate, doors, and damper	£0 19 0
Fire-bricks	0 8 4
Common press-bricks for flue, chimney, &c.	0 16 8
Bottoms and covers for flue, tiles or flags	0 12 6
Chimney-pot	0 2 6
Ash-pit digging	0 3 0
Mortar, sand, and slip for fire-bricks	0 8 4
Foundation for flue, materials	0 5 0
Mason's account for building	1 1 0
	<hr/>
	4 16 4

The estimate given above includes carriage of materials, some of which had to be brought ten miles. All the materials are of the best description, calculated to last the owner's lifetime, and to cause little expense in repairs beyond sweeping, &c.

In building flues, it is necessary to secure a good draught, and that can be done better at the fireplace than at any other point along the flue. Allow the fire to rise at least 1 foot into the flue from the furnace. The heated air will rush into the flue, and as it will not descend, there is no danger of the flue not drawing; but if the flue be level with the fire, and then rise gradually from that point, the smoke and heat will take the highest point, and that being the top of the fireplace as well as the top of the flue, it escapes at the door. True, it may burn if the wind blow in the same direction as the flue runs, but if the wind be opposite, it will blow down the chimney, and the smoke will come through the ash-pit rather than go up the flue, and if the latter is not smoke-proof the house is soon full of injurious gases.

Botching up a flue out of old materials, and giving an estimate of the cost as a fair sample of the cost of a flue is preposterous, and an estimate framed on bargains is equally deceiving. I have made a flue for less than £1 to heat a greenhouse; but everything belonging to it was lying about as lumber, and it only needed labour and brains to turn this to advantage.

Common pot-pipes 6 inches in diameter do very well as a flue for small houses, and, of course, small fires, for should the pipes get too hot they will crack like a clay chimney-pot. The furnace may be made in the ordinary way, fire-bricks used for a yard or so of flue, and then the pipes neatly connected to it; the joints of the pipes should be made up with mortar, and the elbows contrived so that they can easily be taken out, and a piece of wire run down the pipes with a kind of holly brush attached to it, so that you can clean out the flue in an hour without troubling sweeps or masons. A house 21 feet by 15 could be heated in this way for £2 14s.—viz., glazed six-inch pipes, £1 4s., fire-door and grate, 15s., bricks and mortar for furnace, 8s., labour, 7s.

But the cheapest kind of flue I ever saw was made of six-inch horseshoe drain-tiles placed on the bottoms as they are in land draining, the joints plastered with mortar on the outside

only, the tiles having previously been steeped in water to make them adhere to the mortar, and this only cost some 35s. or 37s., I forget which, for furnace, flue, chimney, and everything. This flue heated a house 18 feet by 11, and worked satisfactorily. Amateurs mostly covet such simple contrivances; their enthusiasm often helping them over troubles, and they make as little to do about many attentions as we gardeners make much. Their aim is to suit their ideas to their pocket, and ours is to suit our master's pocket to our craft. An amateur measures his pocket; he has £20, £30, or £50, that he can spend on a hobby, he is fond of flowers, takes a fancy to an orchard-house, likes to grow his own Grapes, and considers how he can do this or that for the least money. If he can build a house for £20, and heat it for less money than a gardener, or if he can plan so as to have a house twice the size of his neighbour's for the same money, securing the same or better advantages, why should he not have them? By all means, I reply, have your wish, but still to argue that your plan would suit Mr. So-and-So's gardener is absurd. Mr. So-and-So, perhaps, objects to your plan, he does not care for a few pounds if he can secure increased gratification, nor grudge a few shillings if he is able to say—"My plants are as good as those of anybody else, and a little better." There is no parallel whatever between an amateur and a gardener, for with one it is a question of obtaining the most for the money, whereas it may be the same with the other, but oftener, "I want the best house that can be had, at least, I shall expect to have things grown up to the mark, for £50, £100, or £1000," and for a gardener to begin patching up a house after this notice would be as bad as making a halter to hang himself.

I have seen an amateur, a clergyman, with his miniature greenhouse heated by a small stove costing but 25s. On inquiring the reason for having so paltry an affair, when he could afford a better, he was pleased to reply, "You know I am no gardener. I will just feel my way with this small house, and when I understand how to manage it, I will (D.V.) have a larger."

"Many clever people, let me tell you," continued his reverence, "go too fast; they begin running up hills, and are blown ere they reach the summit. Had I put up a house 50 feet long, stocked it with fine plants, and had one of your grand hot-water apparatuses, I should have wasted more money than I could spare, by killing plants for want of knowing how to grow them, and taken up more time than my parochial duties will allow."

"But your house, although small, is well built, the squares of glass large, and provision made to admit abundance of air. Why not have a good heating apparatus?" "There you are beat," replied the rev. gentleman. "I will tell you. When I understand this tiny thing I may put up a vinery, and then this house will make a two-light Cucumber-house, and a four-light Melon-house, by putting up a partition. I shall then have a boiler to heat the whole; but if I were to have a boiler for this small house, or even a flue, it would be a waste of money. I had the stove by me worth 25s., and so suited my mind to my means." I was mute.

"Could you tell me of a good boiler," resumed he, "one that will not consume too much fuel? I thought of having a flue, but flues are nasty-looking things, filling up a good deal of space, requiring an annual coat of whitewash, and very often are leaky after all. There are too many joints in flues for my fancy, and the smoke they emit is not very pleasant when the wind blows it into the drawing-room, and covers newly-washed clothes with smuts; besides a flue will not consume coke without attendance every two or three hours, nor cinders from the house, and keep in all night without some small coal mixed with them. A good boiler of small size that will do for hours without attendance, and burn anything, is a desideratum, especially for us amateurs who are as fond of having a good produce as most folk."

This homely conversation ended in my suggesting a plan of my own, as there was no boiler likely to suit him. He had a good boiler behind his kitchen fire, and to have the "grate bars cast hollow," would double the heating power. At one side of the fire place was the oven, and on that side the boiler was to be pierced for the pipe conveying water from the grate bars, and the return-pipe might enter the grate bars on the other side where it would be cast square, but hollow. He was a good mechanic, and could turn his hand to anything, so the making of a model was a pastime. The bars were to be 1½ inch, ¾-inch hollow, four bars at bottom, 5 inches in depth,

and 1 foot 6 inches long; to be cast at any iron foundry for £2, finding own model, and fixed for £1 more. This was calculated to heat 250 feet of four-inch pipe, and do the cooking business besides, and give hot water for household purposes into the bargain.

By this simple contrivance the well-paid artisan could have his greenhouse, vinery, or whatever he pleased without a costly, because separate, heating apparatus. A shopkeeper in the murkiest thoroughfare of London might take the slates off an attic, replace with glass duchesses, cover the floor with some waterproof material, convey an inch-pipe, lead or iron, from the kitchen boiler below, take it through the ceiling like a gas-pipe, or in the chimney, bring a return down alongside it, and then connect it to as many feet of three or four-inch piping, reckoning one superficial foot at a temperature of 212° to heat 50 cubic feet of space to a temperature of 60°. He might have his *Limatodes rosea* and *Lycaste Skinneri* in this attic-house, Ferns if he chose, Roses when he pleased, Violets all the winter, and his "better half" a few hours of delightful recreation daily, without spending more in a year by going to Sydenham, or in 10s. 6d. bouquets at Covent Garden, than would give at home what is sought abroad. Anybody can make a boiler after this model for themselves; but any of the trade patenting it will be prosecuted with all the rigour of the instructions my reverend benefactor gave.

It may be as well to say that I left that part of the country shortly after, and the clergyman was soon after preferred, so that I am inclined to think the suggestion would not be carried out. But it is there, and if I ever can manage to find time to make a model, and have it cast, I will do so, if it be for nothing but to prove whether water will not heat as soon in an horizontal as in an upright tube, which I have proved over and over again from the fact, that a horizontal tube will make as much steam in as little time as an upright.—G. A.

(To be continued.)



A DAISY-ERADICATOR.

WITH reference to your remarks to correspondents on the 2nd inst. under the head "Destroying Daisies on a Lawn," you give but little hope of exterminating these pests.

Having succeeded in utterly eradicating every one on a lawn of half an acre, allow me tell you how I accomplished the task.

With the assistance of a common blacksmith I constructed a simple but most effective Daisy-drawer (as annexed) which enabled me with the least possible trouble to draw out by the roots every Daisy, wild Marjoram, Plantain, &c., on the lawn, and they were not a few. The drawer is pointed, and enters the ground easily in moist weather, and the weed being caught in the fork is drawn out cleanly and more effectually than by any other implement I ever saw, and without making a large hole or disfiguring the turf.—C. B.

MUGWORT USED AS A CURE FOR EPILEPSY.

THE common English name for the plant is Mugwort; the botanical name is *ARTEMISIA VULGARIS*, and the local Irish names are *Bofulan ban*, *Bofulan liath*, *Bofulan liagh*, *Liath lus*, *Mongach measga*, *Buachalan* (but not the *Beanchalon buidhe*, or Ragwort), and *Buafanan*. It is known by these several names in the different localities in Ireland. The Gaelic name is *An Liath-lus*, and the Welsh names *Bydiawg lwyd*, and *Caweraidd lwyd*. It is important that we give the several names by which the plant is known in different places; and the following is a very brief description of it. It is an herbaceous perennial plant, dying down to the ground at the end of the season and spring-

ing up from the roots in the spring. In its young state it closely resembles the garden Chrysanthemum, and belongs to the same Linnæan class and order—Syngenesia superflua; natural order, Compositæ. Leaves wing-cleft, flat, cottony underneath. Bunches single. Florets of the circumference five. Receptacle naked.

Mr. Shephard, Bettystown House, Drogheda, says: Take three or four large roots, fibrous roots included, and the stems and leaves if in season—that is, the roots only in winter, and the whole plant, roots, stem, and leaves, in the spring and summer. The whole, when cut up into very small pieces, should be equal to a good large handful, and boiled in a quart of beer, three cupfuls to be taken three times a-day (we suppose this should be read, a cupful to be taken three times a-day), morning, noon, and night.

In hunting up the medicinal history of this plant, we find in Withering's arrangement of British plants that a drachm of the powdered leaves was given four times a-day by a Dr. Home to a woman who had been affected with hysteric fits for many years. The fits ceased in a few days. In this patient assafoetida and ether has been given to no purpose. The powdered roots have been recently prescribed with success in epilepsy on the continent; and he says, notwithstanding these favourable reports, Mugwort is rarely employed in England, and has been rejected by the London College. Wormwood and Southernwood, which are highly aromatic and medicinal plants, belong to the same genus—*Artemisia*, and may lead many to a discovery of the Mugwort, which grows plentifully in waste places, waysides, and amongst rubbish.—(*Irish Farmers' Gazette*.)

ACACIA SQUAMATA (SCALY ACACIA.)



Nat. ord., Leguminosæ. *Linn.*, Polygamia Monœcia.—A remarkable erect-growing shrub, branched, and having the appearance of being leafless. The branches are slender, terete, flexuose, somewhat glaucous. The leaves are of the form and thickness of the branches, stiff, slightly divergent, about an inch long, bearing in their axils a scaly bud. The branches thus appear to consist of a series of terminal buds seated in the forks of dichotomous branches; the apex of the leaves is slightly

recurved and mucronate. The racemes are short, and bear two or three globular heads of deep yellow flowers; these spring from the axils of the leaves, and issue from the bud of boat-shaped brown membranous scales. This interesting plant was introduced by Mr. Drummond, from the Swan River, and was first raised and blossomed by Messrs. Low in 1848. Like the other Acacias, it blooms in early spring.—(*Gardeners' Magazine of Botany*.)

VINES STARTED WITH A TEMPERATURE TOO HIGH—FORCING STRAWBERRIES.

IN the middle of March when my Vines were started, I changed the kind of coal after a few days' firing. That last adopted was considerably hotter than the other, and the water in the boiler and pipes became overheated: consequently the expansion-chamber which stands at the end farthest from the furnace boiled over and steamed the house. This happened before the eyes had burst. They, however, rapidly developed themselves within a few days, but subsequently to the shoots attaining the length of from 4 to 6 inches, they have almost stood still, and where bunches did show they have since shrunk and dropped off. Will you oblige me by stating whether you consider this to be the effect of a scale, and what is the treatment they should have now? A few bunches remain at the top of the house where the shoots are more vigorous and healthy.

Will you also say when Strawberries for early forcing—say to be ripe in March, should be struck in pots, if thumb-pots are best for this purpose, and if Carolina superba, British Queen, and Sir Harry, are good for the purpose?—D. P. B.

[If we are not mistaken, your Vines are an example that all such things as bursts and extra excitements, are seldom attended with any ultimate advantage. We have heard people boasting in how many days they would have Vines in bloom, from the period of lighting the first fire, even in January, and the result was a good deal similar to the case you state so clearly. Had your Vines received similar treatment in January, it would have been still more unfortunate for them, as the stored-up juices of the plant would have been sooner exhausted. The better the wood of Vines is ripened, the more time will they require to break healthily, and that from heat rising very gradually, beginning at 45°, and not going beyond 60°, until every bud has pushed 1 or 2 inches. If, as we gather from your statement, the Vines were not beginning to move when they had this hot steaming, then the injury would be the less, such as you will get over next season. If the Vines had broken, though only half an inch, the hot steaming might have settled them for the season, and injured them for a year or two to come by deranging the whole system of the plant.

If the vinery was merely shut up, and the buds not beginning to move, we do not think that the Vines should have suffered as you state, from one or two of such steamings, and then we should conclude there was something in the roots, and in the condition of the wood, to account for the standing-still of the Vines. But if from your first-rate fuel there was much of the boiling-over at the reservoirs or cistern, and the house was thus frequently filled with hot vapour, then that alone would account for the condition of the Vines. The buds through the stimulus of the hot vapour would break prematurely, and would go on pretty well, so long as they fed on the stored-up nourishment of the stems, but when that was not followed by a reciprocal reaction, there would come by degrees a want of support, and the shoots would stand still. In our young days we once saw the working of some Vines in January, where a high temperature was maintained inside, and the outside borders where the roots were, were frozen, and the same stand-still took place, and the Vines in bloom dropped their flowers, even though the gardener, but too late, had the borders covered with spruce branches for want of anything better. Much the same thing we suspect happened with your Vines, though in a less degree; the extra excitement worked up the nourishment in the stems before there was a reciprocal action between roots and branches.

Now, as to the remedies. Prevent over-heating by care and a suitable damper; no water in pipes ought to be near the boiling-point, 180° or so is quite high enough. If there is anything like danger from steaming, provide a larger reservoir to admit of the necessary expansion; and as to the Vines, water the border with water at about 90°, if at all dry, and keep the house cooler than usual, lessening the excitement. From 55° to 60° will be high enough at night, with plenty of air in sunny days, so that the heat should rise little above 80°, and if bright sun distresses the Vines at all, throw a little water over the glass with a syringe, the water being just coloured with whitening. In order to promote equal growth, stop the vigorous shoots near the top of the house, and this will throw the vigour back into the weaker shoots. If we understand your case, we think these measures will make your Vines all right next year.

The plants of Strawberries to have ripe fruit in March should be laid in as runners in small pots—say 60's, as soon as you can

obtain the runners. The small pot is filled with soil, set beside the old plant, and a runner fastened into it, with a pebble or anything else, and the soil is watered until the pot is filled with roots, the runner in its pot is then detached from the mother plant, set in a shady place for a few days, and then potted into a six-inch pot. The future treatment has often been given. Good established plants should be got into a house commanding fire heat about Christmas, and the heat being gradually raised, you may expect fruit in the first and second week of March.

We do not think much of Carolina superba for such early work, neither would we advise British Queen or Sir Harry, unless the fruit was wanted in the end of March, or the beginning of April. Keens' Seedling would be better, and a few of the Black Prince would come in earlier still.]

THE REPLY TO "A GARDENER'S LOVE LETTER."*

O, MY Sweet William, it quite gave my Heart-a-choke to hear how your Love-lies-bleeding, cut up, as it were, by the Cissus of Cupid, and all for me. And now it is my turn to confess that, although Phlox of fellows have followed me before, and only the other day there was a Gay-zany-here, who actually dashed his Bachelors-buttons because I wouldn't have him, all of them seem but Sickly-men and dwarf Dalliers compared with Yew, William; and as for their love-letters, "La-burn-'em!" says I to mother, as soon as ever I read your beautiful offer. Pa-sly as usual, immediately inquired about your resources, and seemed much pleased with what you said about being master of the Mint; and he then observed that he always preferred the Gold and Silver-edged sorts as Bedders. He seems to have had a presentiment that you would propose to me, as he remarked to mother, "The first time he Cedar I knew he'd Aster." He desires me to tell you that if Any-gal-is is worth having, or any Gal-hardier than another, you've Pick'd-her, and also that he wishes us good luck in the nursery department. Please to send me some more of your Lad's-love, and believe me to remain until death (long may it be, my William, before I go out Bill-burying with you), your Everlasting—ROSE-MARY.

P.S.—Forget-me-not.

[Since the above was received we have had another reply; but as its verses are not quite equal to those of Anacreon we will only quote from it six lines, which will suffice to demonstrate the writer's feelings are not forced.

"Thou master of the Mint and Thyme,
Come now and make me Holly thine.
Come now, and do not be so Sloe,
For you shall ne'er have cause to Rue.
Believing me for ever, deary,
Your most affectionate—ROSE-MARY."]

CROSS-BREEDING STRAWBERRIES—THE AMERICAN SPECIES.

MOST persons suppose that all Strawberries will hybridise with each other, and there has not been any European or American author but what has inculcated this erroneous idea, until I controverted the fiction *in toto* in the *Horticulturist* of January last, a truism which I had very long since recognised, but had not previously found time and a suitable opportunity to fully enunciate. It is now two hundred and fifty years since the first interchange of European and American Strawberries, and during this entire period there has never been produced a single hybrid between the species of the two hemispheres, nor between the three species which are natives of Europe. The six North American species blend sexually with each other, and the two South American species blend sexually with each other, but these two sections present a normal aversion to any hybridisation with those of the Eastern hemisphere. Messrs. Hovey, of Boston, attempted such hybridisations twenty-eight years ago; Professor Huntsman and myself have tested them for a similar period; neither could succeed. No such hybridised seedlings have been presented in America, in France, or in England, and all pretences of producing any such hybrids now are delusive notions arising from an ignorance of normal facts.

The characteristics of the six North American species are acidity and great productiveness; and the characteristics of the *Fragaria grandiflora* and *chilensis* of South America are large

* See JOURNAL OF HORTICULTURE, May 26.

size, sweetness, and perfume. Of the one hundred and twenty selected varieties of the *F. virginiana*, *iowensis*, and other North American species, there are but about twenty-five now under cultivation in our gardens which have sweetness predominant, and only fifteen which have perfume or aroma; and these are the best selections from thousands of seedlings during the last thirty years.—(Mr. W. R. Prince, at American Pomological Society.)

PORTRAITS OF FLOWERS, PLANTS, AND FRUITS.

ZOSTEROSTYLIS ARACHNITES (Cobweb *Zosterostylis*).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. This Orchid is peculiar to Java and Ceylon. Petals dull green, lip yellowish dotted with purple.—(*Botanical Magazine*, t. 5381.)

COCCOLOBA FLATCLADA (Flat-branched Lobe-berry).—*Nat. ord.*, Polygonaceæ. *Linn.*, Octandria Trigynia. This remarkable plant was discovered at Wanderer Bay, Solomon's Islands, by Mr. Milne, during Captain Denham's voyage of H.M.S. "Herald." "Being throughout the year covered with innumerable blossoms, generally interspersed with bright red, and finally dark purple berries, we regard this plant as one of the most interesting acquisitions of our gardens. It is readily multiplied from cuttings."—(*Ibid.*, t. 5382.)

HIGGINSLIA GHEISBECHTII (Gheisbecht's Higginsia).—*Nat. ord.*, Rubiaceæ. *Linn.*, Tetrandria Monogynia. Probably a native of New Grenada. Leaves rich velvety green above, and reddish-purple beneath. It is a handsome stove plant.—(*Ibid.*, t. 5383.)

ANGULO A RUCKERI (Mr. Rucker's Anguloa—blood-coloured variety).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. The original species is a native of Columbia. This variety is in the possession of Messrs. Rollisson, Tooting. Flowers yellow and crimson.—(*Ibid.*, t. 5384.)

PLEUROTHALLIS REYMONDI (Reymond's Pleurothallis).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Native of the Caracae, at an elevation of 6000 feet above the sea. Flowers purple but small.—(*Ibid.*, t. 5385.)

ASPIDISTRA PUNCTATA ALBO-MACULATA (White spotted-leaved Dotted-leaved Aspidistra).—*Nat. ord.*, Liliaceæ. *Linn.*, Octandria Monogynia. Native of China, imported by Mr. Bull, Plant Establishment, Chelsea. Flowers in the greenhouse during February.—(*Ibid.*, t. 5386.)

FEERN-LEAVED CHINESE PRIMROSE.—Raised by Messrs. E. G. Henderson & Son, Wellington Road Nursery. It is crimson-flowered, and has the unusual property of coming true from seed.—(*Floral Magazine*, pl. 149.)

HYACINTH SAN FRANCISCO.—Yellow-flowered.—(*Ibid.*, 150.)
AZALEA SURPRISE.—Called also *Madame A. Verschaffelt*. Flowers pale pink, rather frilled, conspicuously blotched with deep crimson on the upper segment.—(*Ibid.*, 151.)

AURICULA PRINCESS OF WALES.—Raised by Mr. C. Turner, Slough. Purple self with white paste.—(*Ibid.*, 152.)

MIMULUS MACULOSUS.—Three varieties from Mr. Bull's Nursery, Chelsea. *Charm*, *Mamel*, and *Sparkler*, all bright yellow, variously spotted and blotched with crimson.—(*Florist and Pomologist*, ii., 73.)

PEAR BRITISH QUEEN.—Raised by Mr. Ingram, Her Majesty's gardener at Frogmore. Large, pyramidal, golden-coloured fruit, excellent for dessert, ripe in October. Had a first-class certificate from the Royal Horticultural Society's Fruit Committee.—(*Ibid.*, 80.)

THE FEAST OF APPLES.—There are many holidays observed by the Russian Church, but the most prominent are the Honey Festival, on the 1st of August, and the Apple Feast. Both are peasant festivals, and much regarded—at the former the honey is blessed, and at the latter the Apple. No Russian ever thinks of eating an Apple before the 6th of August (old style), when the day's ceremony has blessed the fruit, a restriction which must be attended with very good results in a country predisposed to cholera. The Cathedral of the Repose, Uspenski Sahor, was the first entered by Mr. R. S. Graves, author of a "Yatching Cruise in the Baltic;" and the congregation was pressing forward to the priests, who stood in front of the Ikonostast. The leading priest, most magnificently dressed, held a gold and diamond-studded cross to all who presented themselves to imprint upon

it their eager kiss. On his right stood another, who had dishes of blessed Apples on a table before him; and we observed that all who had kissed the cross received an Apple.—(*Scottish Farmer*.)

HESPERIS MATRONALIS FLORE PLENO.

DOUBLE ROCKET.

It may not be out of place, seeing that after the last bad season for what are called bedding flowers both north and south of the Tweed, and more especially as there have been indications among writers in the latter part of the kingdom of a desire to fall back upon some of the old-fashioned hardy flowers, and as this new periodical will most likely be read by every lover of flowers in the west of Scotland—to bring before their notice a few hardy flowers of real merit, which have been put aside or forgotten in the rage for ribbon-borders and masses of tender flowers, but which with a little care throughout the year would give a fine display of bloom from early spring to late autumn. A great variety of these could be named, both in colour and in height, and in their season of blooming, but I will only select one at present—the Double Rocket, as during this month (June) it will be in bloom, and there being variety enough in itself both in colour and height to form an excellent contrast. It is possible that it may still be found in some out-of-the-way corner of the herbaceous border, and if so, it will require no recommendation from me. As for the cultivation of it, no gardener worthy of the name requires to be informed; but I would just ask them to try a ribbon, of say the first row dwarf double white; second row of crimson; third, purple; fourth, tall or French white; or say a row of the double yellow *Barbarea*, and then a row of French white. Or, perhaps, a bed of any convenient length, and say 5 feet wide; centre row, tall white; next two rows, purple; and two outside rows dwarf white, 1 foot from plant to plant, or any such arrangement, and I am sure it will amply repay the trouble next June.

To the uninitiated, I would say, if there are old plants to begin with, cut down the flower-stems to about 6 or 8 inches from the ground as soon as the flowers are beginning to fade; stir the soil round the plant, and top-dress with a little light soil, say old rotten leaf mould and sand, in equal proportions. In the course of two or three weeks plenty of young suckers will have been formed from the old stem, and will be striking roots for themselves. These should be taken off, and either planted under a hand-glass or cold frame, in light sandy soil, in a shady corner of the garden, and watered carefully. If not rooted when taken off, they will soon strike in a cold frame or under a hand-glass. Cuttings may also be made of the flower-stems that are left, after cutting off the flowers; but in general, the suckers from the root will be sufficient. The plants thus obtained should be planted out in common garden soil, with the addition of a little old rotten manure in autumn, or if not convenient then, they may be kept over winter in a cold frame or nursery-bed in the garden, and planted early in spring, not later than March. If planted in what is called an herbaceous border, the dwarf white should be placed in the front row, and the others in the next. If the border is wide, the dwarf in the second row, and so on with the others; and, by a little care, they will make a fine display next summer. The only enemies they have are snails, and a small green caterpillar, which makes its appearance about the beginning of April in the centre of the young flower-stems, and its whereabouts is known by its drawing together the leaves. It should then be hunted out and destroyed. A little sharp sand placed close round the plants when planted, will help to keep the snails at bay.—ALEXANDER STORRIE, *Whiteinch, Partick*.

[From the first Number of "The West of Scotland Horticultural Magazine," which promises well.]

ICE TRADE AND MANUFACTURE.

THE trade in ice is now one of great and increasing importance. Ice has always been esteemed as a luxury in warm weather; and this early led to the storing of it in winter and preserving it for summer use. The Greeks, and afterwards the Romans, at first preserved snow, closely packed in deep underground cellars. Nero, at a later period, established ice-houses in Rome, similar to those in use in most European countries up to the present time. But these means were not enough to supply the luxurious

Romans with ice for cooling beverages, and they actually established a trade in snow, which was brought to Rome from the summits of distant mountains.

The trade in ice in this country has, until lately, been very limited, having been chiefly confined to the supply required by a few of the first-class fishmongers and confectioners—the private residences of the more opulent families being furnished with ice-houses, in which a sufficiency is kept for private use. But the North Americans have started a trade in this article in their own cities, which has extended to Europe and Asia, and has, in an incredibly short space of time, attained a surprising magnitude. The export of ice from America was commenced about 1820, by a merchant named Tudor, who sent ice from Boston to the West Indies. After persevering against many losses, he succeeded in establishing a trade with Calcutta, Madras, and Bombay; and now not only is it sent in vast quantities to those places, but also to Hong-kong, Whampoa, and Batavia. About fifteen years since, the Wenham Lake Ice Company commenced sending ice to this country from Boston, which is the great American port for shipment of this material; and since then, not only has there been a continually increasing supply, but the success of the Company has been so great as to tempt others into the market, and many cargoes now annually come from Norway and Sweden.

In America the ice is chiefly collected in the neighbourhood of Boston, Philadelphia, Baltimore, Washington, and New York, and the lakes which supply it form no small part of the property of those whose lands border thereon; these have all been carefully marked out, and the right secured, so that, when the winter comes, and the ice is formed, the harvest begins with great regularity. The ice is cleared from snow by means of an implement called the plane. An ice-plough, drawn by horses, and driven by a man riding upon it, is then made to cut deep parallel grooves in the ice, and these are again crossed by other grooves at right angles, so that the whole of the surface is deeply marked out into small squares, measuring a little more than 3 feet. A few of these square blocks being detached by hand-saws, the remainder are easily broken-off with crowbars, and floated away to the ice-storehouses, which are usually built of wood, on the borders of the lake. Some of these are of vast dimensions, and contain vaults of great depth; the walls are double, and sometimes treble, being altogether as much as 4 feet in thickness, and having hollow spaces between to render them nonconductors. The blocks of ice are covered up with sawdust, a layer being placed between each tier of blocks. Many of these ice-houses are made large enough to hold from 40,000 to 50,000 tons of ice. When fully stored, a large quantity of dried marsh-grass is trodden in upon the top, to the thickness of several feet, and the doors are then securely closed. The domestic consumption of the United States in 1860 had reached very nearly one million tons, and the export trade exceeds 280,000 tons per annum, of which England takes, on an average, about 20,000 tons, costing £20,000. The total value of the ice which is stored in America has been computed at £900,000, and if to this we add the ice-trade of Norway, Sweden, Russia, which, from the slight data we possess, is estimated at £600,000, we have the astounding fact, that a value of one million and a half sterling is added to a comparatively small body of water by the mere act of freezing.—(*Chambers's Encyclopædia*.)

DOES THE OWL DESTROY GAME?

Does the owl kill any other quadruped or even biped except the mouse, and, perhaps, in certain stages of its growth, the rat?

The velvetten Dogberrys of our game-preserves have ever answered such queries as the above in the affirmative; but as to the cause why these sober effusions are not generally accepted we know not, save that a little prejudice may influence the evidence of the aforesaid keepers.

But whether this be so or not, certain it is, that I am not influenced otherwise than favourably towards our useful pest-exterminator—the owl, even though I am about to charge him with habits not calculated to promote his well-being generally. I say habits, yet we have no proof that it is habitual with him to destroy game; and did I think that the incident I am about to relate as having occurred beneath my own eye, would cause any to meditate future injury to him, I would certainly regret having been influenced by the wish to assist in arriving at a proper conclusion as to the real nature of his doings in this way.

At that calm time, the close of eve, I recently halted in my walk round the mansion to fondle the warder dog, when suddenly the noble fellow attempted without ceremony to spring from my hold. Upon looking up I saw passing close by a hare followed by two leverets, each about six weeks old, at the same instant a light object fell with unerring swoop upon the hindmost. A cry of pain was heard, and before I could recover my surprise the dog had approached the two objects, when away flew the white one, "an owl!" Two minutes had not elapsed before again a similar cry of pain shot through the air; away again bounded the dog to repeat his rescue of the second mortally wounded leveret. I availed myself of the opportunity of inspecting the leveret without the dog having touched it. It was dead, each leveret had a wound about an inch in circumference precisely in the centre of the back. Doubtless, the owl has young owlets whose requirements incite the old ones to adopt unusual practices in their efforts to procure food.—W. FARLEY, *Digswell*.

WORK FOR THE WEEK.

KITCHEN GARDEN.

HOEING, forking, and surface-stirring to be diligently persevered in; the advantages derivable therefrom are manifold: weeds are exterminated, slugs disturbed and destroyed, moisture retained at a time when it is most needed, and a healthy action kept up between the roots and the atmosphere, which is the principal cause of the success which follows these operations. Trenching vacant ground to be prosecuted where required; and if manure is wanted on the ground about to be planted it is best to lay it on the top after trenching, and then fork it in. Let all green refuse be removed from every part, and either dug in or taken to the char-heap. *Asparagus*, to maintain the strength of the grass for next year no more of the produce should be cut. Late and close cutting is one of the principal causes of weak grass. *Cauliflowers*, the plants that are now forming their heads to be watered and mulched with short litter, this will cause them to come close and compact. *Celery*, continue to plant successional crops into trenches; take up the plants with as much earth about the roots as possible, and by no means shorten any of the leaves. Immediately after the planting give them a good soaking with water. The earliest crops to have the earth loosened about their roots, as the frequent waterings they require harden the surface and prevent them from receiving the benefit which they otherwise would receive from future waterings. *Cucumbers*, those on ridges to be supplied with plenty of water, and liquid manure occasionally. *Endive*, make a sowing for the main autumn crop. Plant-out a few of the early sowing; keep them watered until they get root-hold. *Herbs*, some of them will shortly be fit to cut for drying: the best time for doing so is just as they are coming into flower. *Lettuce*, keep a quantity tied-up for blanching. Make another sowing in drills where they are to remain. *Spinach*, sow a few rows for succession; if the weather continues dry water the drills before sowing, and again after covering them. Plant-out the forwardest Brussels Sprouts, Green Savoys, and Buda-kale; if the weather keep dry the roots to be dipped in a puddle consisting of earth and water, worked up to the consistency of thin mortar, before being planted. *Sea-kale*, the buds on the old roots to be thinned-out considerably. Young seedlings, if any, to be thinned, and the thinnings planted if required. *Saladings* of all sorts are now in great request; look well to successional sowings, and see that they all have copious supplies of water to induce crispness and mildness.

FLOWER GARDEN.

During the continuance of dry weather frequent waterings to be given, not only to the recently-planted trees and shrubs, but to the bedding-plants, annuals, &c. In watering it will be better to give the soil a good soaking once or twice a-week in preference to a mere sprinkling on the surface daily, which has a tendency to make the surface bake; mulching, whenever practicable, to be adopted, as well as damping the foliage of newly-planted things each evening. Go over the beds frequently, and keep the young shoots of *Verbenas*, &c., nicely regulated and pegged down until the ground is fairly covered, after which the shoots may be allowed to grow more freely. *Carnations*, *Picotees*, and herbaceous plants, with the taller-growing bedding plants, to be staked and tied-up to prevent injury from high winds. Remove suckers from *Roses*, and give them plenty of manure water to keep them in a healthy and vigorous state. Mildew is some-

times troublesome at this season, and no time should be lost in dusting the infected plants with sulphur; for if neglected the evil will soon spread and destroy the foliage, and ruin the plants for blooming in autumn. Mulch Dahlias with rotten dung, and give plenty of water in dry weather. Propagate Pansies by the side-shoots.

FRUIT GARDEN.

The recent hot weather has brought out the insect tribe in abundance, and they must be met with timely remedies. A good garden engine or syringe should be kept in frequent use amongst Currant bushes infested with aphides and honeydew. Fruit trees on walls would also be benefited by a good syringing. A fumigating on a large scale is sometimes practised by collecting a good heap of rubbish on the windward side of the fruit trees, and when ignited the great smoke is productive of good effects. Where practicable the Strawberry-ground to be thoroughly soaked with water; such is the excessive heat of the weather at present, together with the drought, that without a liberal supply of water the fruit will most probably ripen prematurely. Thin the young wood on wall trees to the quantity required for bearing next year, and nail or lay it in carefully, taking care that the tender shoots are not bruised. Pinch the points out of the young shoots of Fig trees when they have made five or six joints. By such means more stocky and fruitful wood will be obtained.

GREENHOUSE AND CONSERVATORY.

The sprinkling of the soil and the paths to be often resorted to during bright weather, and a thin screen of some kind should be thrown over the roof or portions of it from eleven o'clock to nearly three. This will retard the specimens already in bloom, and prevent too great a demand on the energies of the plants. When arranging the plants let there be no crowding, but allow every specimen full place, especially hardwooded plants. Large specimens of the hardier kinds of greenhouse plants may now be placed in a sheltered situation out of doors. Those that require repotting to be kept in the house after shifting until the roots get hold of the fresh soil. Attend well to young stock, which will now be growing freely; keep the shoots nicely regulated and shaped as may be necessary to secure well-formed specimens, and use every care to give them a moist atmosphere, sprinkling them overhead early on the afternoons of bright days, and reducing the air; but we may repeat that young stock will be better in pits and frames than in greenhouses. Specimen and choice plants when nearly done blooming to have the faded blooms picked off, and to be well washed with the syringe, to be then placed in a cool shady place to recover themselves before potting, which, as before advised, should on no account take place until a fresh growth has commenced. Spare room, if any, may be occupied with Fuchsias and softwooded plants for the conservatory.

W. KEANE.

DOINGS OF THE LAST WEEK.

Tanks.—The weather still very parching, for though rains have fallen not far off, none have come our way. The 30th and 31st ultimo looked promising for a drenching, but all passed away, and the same may be said of the 3rd inst., though the barometer is gently falling. Why mention these matters? Just because they have so much to do with our doings, as water is now the most important matter with us, and not only are gardens, but the villagers all round here, are feeling the want of water very much. We cleaned out our large tank yesterday, so that when rain does come, we will have plenty of clear, sweet water. We found some small cracks in the side, which were fresh pointed with cement, furnishing a hint that large tanks of great length would be the better of a wall across them in the middle as a stay, as when the water is low there will be less or more of pressure from the earth outside. This tank is, inside measure, 6 feet deep, 24 long, and 12½ wide. There is only about 9 inches above the ground level, surface of the water all exposed. The ground dug out was clay, the surrounding ground clay. The walls are 14 inches thick laid in cement, with the exception of three courses or so at top, which are 9 inches, and covered with rounded ridge-bricks. There are besides piers outside at the four corners, and two on each side. The bottom was concreted, then a layer of bricks in cement covered with tiles in cement, and then a coating all over bottom, ends, and sides, of cement. We mention these particulars to meet the wishes of several correspondents, who see the necessity of saving the water that falls from their houses, and just to hint that it would be false economy to build such tanks with walls of four-inch

work, as two friends propose doing, if the tank is to be any size at all. Nine-inch walls will not be too much for a tank half the size of the above. For many years, though fully exposed, we never saw the slightest mark of a crack in it; but then it was more supplied with water than for the last two years. The pressure of the clay when swelled with water outside was, therefore, more resisted by the water inside. In such circumstances, as an improvement in such a long tank, we think it would be true economy to have a wall across the middle from side to side, with openings below for the water, or an arch or a couple of arches abutting on the sides, would have the same strengthening effect. The walls are also built perpendicular, but we question whether strength would not be gained by inclining them outwards—say 6 or 9 inches in a height of 6 feet. The clay was well rammed against the walls. We would, however, prefer common earth to clay, as it swells less when wet. The two or three cracks in the sides are very trifling, not the sixteenth of an inch, yet we are convinced that before noticing them we lost water through them. There is nothing of the kind in either end which convinces us that a wall across the centre would be advisable. To prevent the clay outside being soaked, we have covered part of the surface near the tank with tar and gravel.

Two or three questions more. A says he cannot make a tank near his glass house and sheds. Ours is a considerable distance off, with connecting-pipes between them. B fears that if exposed the cement would be thrown off by frost. Such tanks would be best covered in winter by placing poles across, and laying thatched hurdles over them, with more litter in severe frost. Ours was protected for two years. Since then we lay long straw round the sides, hanging 2 or 3 feet over the water, and poles placed over the straw to keep it in its place, and the tank has not been injured by frost at all. If the frost was very hard, we would cut and remove a part of the ice in the middle, and that would save opening the ice-house. However, covering would be the safest. C would prefer a tank to be arched over out of sight altogether. To this we say that the expense will be much more, and for gardening purposes the water will be far inferior to that standing in an open tank. For years the water in a covered tank will be hard, from the cement, but that may be remedied with a little lime or soda. For domestic purposes the covered tank would be best, and should be supplied with filters, as all extraneous matter is then excluded. We have another nice tank 20 feet long, 9 wide, and 5½ deep, which we are afraid to empty out, and several rough receptacles besides, to receive the water from walks, roads, &c., and we begin to think we must have still more contrivances if we wish to be safe and keep crops going on as they should do.

Put out some Lettuces on north slopes to keep them cool, and scattered short grass that had been heated in a heap between the rows. Shaded Turnips with laurel branches to keep them a little moist. Scattered short grass over rows of Peas lately sown and well watered, to keep the moisture in. Removed the last of Broccoli, and moved part of covering off Vine-border for ground to be dug for the last general sowing of Peas. Watered Peas bearing and in full bloom, and placed short grass and litter along the rows to keep the moisture in. Littered in a similar way quarters of Cauliflower, and if we cannot water more will strew a little clean straw or hay over the heads to prevent the leaves getting slaty-coloured by an excess of evaporation. Sowed more Turnips and Radishes, the first 2 feet apart in rows and the Radishes between, and covered with wattled hurdles to keep off the full force of the sun. These, to be crisp and nice, should be sown often, the one crop put in as soon as the other appears above ground, and sowing only little pieces at a time. The White Dutch transplanted is tubering very well. We never tried it much before, though long conversant with the fact that the Swede does first-rate transplanted. Planted out Cauliflowers that had previously been pricked out, and as they were lifted with good balls will suffer little from moving, and need but little water. Pricked-out more, and sowed a little more for the autumn crop. Gave all seed-beds of Greens a watering from the cleaning-out of the tank. But for the weather many of them ought to be out. In general, notwithstanding the long drought, crops are looking well. Our last-sown Beet does not yet show, and we cannot help it by watering.

FRUIT GARDEN.

Forked the ground slightly between and around young trees of Apples, Pears, &c. Gave a potful or two of water, and then mulched with half-rotten leaves, which will keep in moisture and entice the roots to the surface. The scuffing of the surface

of the ground had kept the soil moderately moist beneath among Strawberry-rows, but still they seemed as a stand-still, looking woe-begone and refusing to swell kindly, so managed to give them a watering along the rows after strewing the ground slightly with soot and lime. Covered up immediately close to the plants with long litter, well shaken to get out most or all of the droppings; and, if the dry weather continue, will cover that again with a sprinkling of short grass that has been heated dry in a heap. This, from making the covering closer, will still farther prevent evaporation. We used at one time to use short grass from the lawn for thus protecting Strawberries and keeping them clean; but, among other objections, there was almost the certainty of getting afterwards, all over the ground, a green sward of Daisies. By throwing all such material in a heap, it will heat and ferment so violently as to kill all the seeds, and it then may be shaken out and used for this purpose, or mulching any growing crops, as Cauliflowers, Peas, Beans, &c., and every shoveller will wash some nitrogenous matter into the soil. A clergyman, who seems to be at home in gardening, told us the other day that the very best thing he ever found for mulching and keeping the fruit of Strawberries clean was rough fresh tan from the tanyard; and a moderate layer being used, very little moisture would evaporate from it after the surface was dry. In answer to our inquiry, he stated he never perceived the least taint in the fruit from the fresh tan. Very likely, just as in the case of our litter, it would generally be washed several times before the fruit was ripe. We should like those near tanyards to give the plan a trial, and report the result.

Gathered lots of Gooseberries for bottling, as they much needed thinning owing to our having pruned little last season. Observe fly clustering on the points of some of the young shoots, and sent a lad to nip the points off, and then burn them; and will syringe or engine with clear soot water to keep them at a distance, as when such fly gets a-head the berry is scarcely presentable. Tied-up canes of Raspberries that had been blown down by the wind, and thinned the young shoots. Stopped the points of the stronger shoots of Pears, Plums, and Apples, especially dwarf standards, and cut back very strong shoots to a few buds from their base, or removed them altogether where wood of moderate growth was not wanted. To keep trees dwarf and full of bloom-buds young shoots should be pinched when from 6 to 9 inches in length. This will swell but not start the buds near the base, and many of these will be bloom-buds next season. Looked over a few Plum trees that were a picture in spring, and which the birds in a few hours left a wreck, scattering the ground with flower-buds, and wood-buds too, so that the shoots are thin, and many of them stronger than they ought to be; stopped the latter early to get serviceable twigs of moderate growth. Very few bloom-buds escaped the onslaught, so we must set this against the clearing of caterpillars from the Gooseberry bushes. We hope the caterpillar will not come a second time. The extreme dryness is causing Black Currants to be slightly affected with honeydew, and we must syringe, as we cannot water. This Currant is extremely fond of moisture, provided the moisture is not stagnant, and much the same may be said of the Raspberry. The best fruit we ever saw were wild ones on the shelving banks of a running stream with the shade of deciduous trees not over-thick above them.

Watered the trees, and moistened the borders in orchard-houses to keep them cool and comfortable. Went over Cherries against walls again, the points of the shoots getting black fly on them again, though they had been dipped in tobacco and size water. We never found any plan of dipping or washing of much use unless adopted in time, as what is strong enough to kill the insects is generally sufficient to kill or blanch the leaves. Many of these leaves and young points may be pulled off at once and burned, and save much bother; and for insect-destruction, after all there is nothing like nimble fingers catching them and squeezing them, and shortly afterwards getting rid of the debris from such destruction by a good syringing with warm water. Such water at times may be used safely at 120°, but not too often, and must be used when cloudy or in the evening. Plums received much the same treatment. Those in pots and well shortened-in the previous season are some of them better supplied with fruit than wood-buds. Went over Apricots, thinning wood, nipping the points of moderate-sized shoots, and shortening back to a few buds very strong ones when they appeared. Fruit thin as a whole, owing to the wood being imperfectly ripened last season. A great object in such circumstances is to secure moderate-sized wood, and to keep it and spurs

as close to the wall as possible. Next to ripe wood and buds, dryness and sun and heat when the trees are in bloom, with plenty of air, are the chief essentials for a crop. The best and most regular crops we ever saw were on the gable ends of houses facing south, south-east, and west, with a fireplace and chimney on the other side of the wall. In cold seasons it was easy to see to what beneficial width the warmth of the chimney extended. For Apricots, therefore, if building, we should like a hollow wall heated with pipes or flues, and no other protection given except in severe weather. A very ingenious friend has just been telling us—nay, showing us—how a twelve-inch hollow brick wall can be built with three per cent. more bricks than a solid nine-inch wall, and every brick be tied and held firmly in its place, which is not the case with the common nine-inch hollow wall.

Moved the whole of the Strawberries out of the houses (vineries and Peach-houses) to cold pits, where they could get more light and air, as in shade they were getting soft and rather flavourless in the houses. The houses will now have some room in them, and not before it was wanted. The fruit, swelling and ripe, will keep much longer in such pits with plenty of air, and will keep us going until we get them ripe from the front of an orchard-house. Thinned grapes, tied-up shoots, and gave a good heat to the late house now in bloom, in addition to drawing a dry hand over the Muscats every day. Other vineries will average from 55° to 60° at night, and in these bright days will range with air given early from 80° to 90° during the day. The late house has rather less air and more artificial heat, ranging from 70° to 85° and more during the day, and averaging 65° to 70° at night, or a few degrees more, until the fruit is set, when we will let the temperature decline at night. The 70° and 75° at night for any continuance we consider more than mere waste of material in the case of Vines in general. High temperature in sunlight is a very different thing.

Regulated Melons setting, and those swelling and ripening were placed on inverted pans or saucers. They had been placed on the top of pots, but were changed to saucers or slates, as we always think that a Melon, like a bunch of Grapes, is best when the foliage protects the fruit from the full force of the sun. Some Cherries in pots have come in useful, and neither they nor those on short standards out of doors have been troubled with fly, like those on walls out of doors. Watered Fig-house; a very heavy, too heavy, crop now swelling fast and ripening; and removed the covering of leaves, and the tar and sawdust jacket from the Vine-border. A few places exposed were very dry, but all under the jacket was just nicely moist. However hot the jacket no moisture would rise from it, and the heat of the sun acting on the hard smooth surface, would bring moisture to the roots from long distances. Once we let a jacket of concrete and tar remain on a border for four years, and only removed it when we found the Vines getting far too fruitful, giving more bunches than fair-sized leaves. If we have cold evenings, will cover the border with litter. It is just moved on the surface to take a little warm rain if it come.

Attended to plants in conservatory, and those planted in flower garden, but have delayed finishing bedding plants, Dahlias, &c., as they are so much easier watered in groups close together, than if planted out.—R. F.

TO CORRESPONDENTS.

* * * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

FLORA OF THE NILE (*Mary*).—We are not aware of any special work upon this subject. It is probable there will be some information on the subject in the account Capt. Speke and Grant will publish of their discovery of the source of that river. Mr. Wyld, Charing Cross, has published a map showing their track as well as those of Rebmann, Livingstone, Andreen, Moffatt, Burton, Du Chailu, and others.

WOOLLY-ICE IN TANNERS' BARK (W. M.).—The woolly-ice like old tan. If you could move the tan you would get rid of a good many. If that cannot be done you must destroy them thus—water the bed over except about 6 inches or so at the sides; they like dryness, and will congregate there; to encourage them more, place some dry hay along the sides. Get some boiling water ready in the morning, move the hay, and as you do so pour the boiling water on the myriads you will see. Turn the tan so as to present a dry surface, place more dry hay, and repeat the process, and go on and you will beat and annihilate the enemy if you have patience and perseverance.

PEAR LEAVES BROWN-SPOTTED (E. Steaine).—We think the spotted Pear tree in your orchard-house is suffering from fructive root-action and the extra force of the sun in this hot weather. Prune off the worst leaves; disengage the foliage, shade, and dig about the roots with a spade all night. You have the fat scale on the Orange trees. You must wash off with a sponge and soap and water, and syringe with clear water in a day or two afterwards. We are obliged for information about flies. Our own opinion is that if formed of pipes, such as flues never before less than 10 or 12 inches in diameter. Small pipes of 4 and 6 inches for such purposes are great nuisances. With bricks near the furnace, and a brick rest like a cesspool at the corners, any single house not requiring a high temperature may be economically heated by such pipe-flues, and with these rests covered by tiles the dust may never be moved.

VINS LEAVES WARTED (S. W.).—The brown marks or warts are the effects of high feeding and keeping the house in the temperature you speak of—70° to 80°, with moisture in proportion. Loosen the surface of the border, give more air, and let the house fall to at least 60° at night, and from 70° to 80° with sun heat; if it is a few degrees less the vines will do all the better; and as they are very healthy they will grow out of the warty fungus matter.

PEACHES MILDEWED (W. Nolan).—Your Peaches are far from ripening-point yet, and we fear, if the specimen sent, there will be little chance of their ripening. They seem to be taken up with mildew. On the first appearance of it on either fruit or leaves the parts should have been dusted with flowers of sulphur as a remedial measure, and the more sulphur that was used in painting walls, trellis, &c., the better. For a radical cure, however, the roots must be looked to. Two opposite causes will produce this mildew. First, a cold stagnant moisture at the roots, when the top is exposed to a warm dry air, or a very dry inactive state of the roots, when the top is exposed to the excitement of a hot moist atmosphere—in other words, the want of correlative action between the roots and the branches and leaves.

CUCUMBER-PIT HEATED BY DUNG (Patelin).—But for the expense of the chamber and the bricks there is nothing to be said against your house or pit, especially for late spring and summer work. We think that long ago Mr. Fish gave a plan of a Cucumber-house with chamber; but then there were means for letting vapour out of that chamber at will, and means also for giving dry heat at top when necessary. On the whole, then, we think your house would be improved by raising the back 18 inches, and the front 6 or 9 inches; by having several moveable doors, as 6 in the wall c, to let air into the atmosphere when desirable; and having tin pipes for top heat, such as one in front and one on top of wall c, these also furnished with evaporating-pans, and then you may dismiss your mounds of dung at each side. With your present plan of air-bricks you could not use that dung unless it was previously sweetened, as a rank steam will soon settle your plants.

DISEASED GRAPES (New Bedford).—The ulcer in the Grapes is called "the spot." The roots being grown over hot-water pipes, we fear they are too dry. Without knowing more, we can only say that this disease is usually caused by the action of the roots and of the upper growths not being accordant.

APPLES (Dr. Davies, Pershore).—We do not know the Comberton Pearmain by any other name. It is very like Scarlet Pearmain, but it is not usual for that variety to keep so long as these seem to do. The seedling from Sturmer Pippin is in good condition, and promises to be a useful late Apple. The Fern is *Cyscopia* is fragile.

DENDROBATE PAXTONI (Orchidophiles).—We would remove the shoots rooted from near the tips of the old stems, and either plant around the parent or make fresh plants of them.

LAPAGERIA NOT GROWING (Idem).—Give the Lapageria a good watering and try it a little longer, and then if it does not break it would be as well to take it up from the greenhouse-border and re-pot it until it made good growth. The want of a continued application of water is the probable cause of defective growth.

MELONS FALLING WHILE SMALL (S. E. L.).—Is there no want of bottom heat or moisture at the roots? Continue giving air freely, but try and give more water to the surface soil continues rather dry by making holes for filling with water.

PEACHES MILDEWED (Nescoe).—There is no doubt that your Peaches are mildewed, and sulphuring must be resorted to, as we have told another correspondent to-day. If the ground is dry, watering would be serviceable. Peaches are more liable than Nectarines to be thus attacked.

CHARITABLE TOMATOES MANAGEMENT (Amateur).—It is best to let it flower at the proper time, and then cut the flower off when perfect, as the plant looks better without it. As the summer advances, there will be some suckers rising from the side. Remove the distant ones, but let those in the line or adjoining it remain, and now and then thin the shoots with a knife, laying the remainder in the proper line and pegging it down there. Clipping ought to be avoided, as it is apt to kill portions of the plant and disfigure the edge.

HEAT REQUIRED FOR MELONS (Melon).—From 70° to 85° before air is given is not too much for dry heat; but there is no harm if the heat declines to 65°, or even 60°, at night, provided everything else is favourable. There need be no particular change of heat after the fruit is set; in fact, Melons will not thrive at all under extreme changes, and any omission in giving air or taking it away is often fatal. See what Mr. Fish says in "Doings of the Last Week," also Mr. Keane's "Work for the Week."

PANSY SEEDLING (Woodlands, S. X.).—If the colour has not been altered in drying the Pansy is different from any we have seen; but if when fresh the tips or spots are white (as is possible), it is similar to, if not identical with, the old Magpie.

NAMES OF PLANTS (Philanthes).—The plant in the Loek garden is *Collomia coccinea*, a hardy annual, native of Chili. (*Student*).—1, An *Allium*, no leaves sent; 2 and 3, mere scraps, and undeterminable; 4, *Asperula odorata*. (*M. A. S.*)—Your specimen is too small to judge from. It looks like a pinna of a weak frond of *Asplenium lanceolatum*, and is certainly some *Asplenium* of that affinity. (*R. A. L.*)—*Asplenium adiantum-nigrum*. (*G. S. A.*)—*Anthericum Liliago*, or St. Bruno's Lily. (*H. E. K.*)—*Ceanothus dentatus*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE BEVERLEY AND EAST RIDING OF YORKSHIRE POULTRY EXHIBITION.

THE sixth annual meeting of this popular Society was held on the 3rd instant, and proved to be most successful, the poultry exhibited being of the highest class; and the collection of Pigeons also was such as to fully maintain the high reputation of this department of the Beverley Exhibition, a feature in which, from the very commencement of this Society's efforts, its annual gatherings have always excelled.

It is not open to doubt that few poultry shows have so entirely won the confidence of the public as the one of which we are now speaking, for the Committee are both painstaking and industrious, so that the success of their meetings may be entirely attributed to the personal exertions of these gentlemen, who thus leave very little connected with the Show entirely to the care of subordinates. For reasons with which we ourselves are not perfectly acquainted, it appears, however, that a change in the general arrangements has now for the first time been attempted—viz., that of curtailing the public admission to a single afternoon—a feature, we should imagine, ill-calculated to increase the sum total of the receipts derivable from monies taken at the doors. We exceedingly regret, too, that from some misconception on the part of several competitors respecting the rule contained in the prize schedule as regards the time of admission of the poultry for competition—a regulation, by-the-by, so very plainly expressed that we can only attribute the mistake to overlooking the necessary condition altogether—many most valuable consignments of both poultry and Pigeons arrived not only long after the onerous duties of the Judges were absolutely completed, but some half dozen pens were so late in their arrivals as the day following the arbitrations, consequently after the Judges had left Beverley on their return homewards.

We can fully enter into the disappointment and annoyance of the respective owners of these birds, whose losses from this cause alone were not by any means trifling, nor can we do better than again call the particular attention of exhibitors generally to the simple fact that no point in the exhibition of poultry can be of greater importance than a thoroughly careful general review of the prize schedules, compiled by each Society for the government of the exhibition for the current year, before taking the first steps as to making any entries whatever; and it is well also to carefully put aside such rules for after-guidance and reference. The neglect of this important rule on this particular occasion no doubt threw at the least twenty prizes into other hands, besides causing cards bearing the words "Too late for competition" to abound in unseemly abundance throughout the show-room.

Beverley possesses many local attractions to visitors, its minister being one of the finest architectural buildings in the kingdom. It enjoys also another church of scarcely less high repute, together with some of the most lovely rural walks imaginable. Among the latter are "The Bushes," situate a little better than a mile from the town, covering a large space of many acres, the "bushes" being a collection of many thousands of hawthorn trees just now in full bloom. The fragrance produced by these immense masses of flowers thus mingled in pleasing contrast of both red and white "May" is scarcely conceivable except by its absolute enjoyment, and this opposition of colour happily prevents the eye from palling before so brilliant a display. In this truly lovely retreat a pair (or more) of Nightingales have this season taken up their abode to the no small delight not only of the good people of Beverley itself, but also of many visitors from a distance. The consequence is that nightly these public grounds are well filled with large numbers of individuals anxious to hear the sweet warblings of these universal favourites. Disappointment very rarely ensues; for, in spite of the hum of tongues and even the cigar-smoking at such times so generally indulged in, Philomel mounts her accustomed tree and delights her nightly audience

for hours consecutively. It is earnestly to be hoped that the general desire these truly interesting birds should still enjoy their liberty will be scrupulously complied with, being the course of all others most calculated to insure in future years a similar enjoyment, as Nightingales customarily return annually to their former breeding-place. These birds, too, are not by any means common so far north as Beverley, it being about twenty years since a pair located themselves in this neighbourhood before.

But to return more immediately to the Show of poultry. Its close connection with the Floricultural Fête adds most materially to the popularity of the whole affair. A most commodious tent—large enough, it is said, to accommodate a thousand persons to dine—is the receptacle of the flowers, whilst the closely-adjacent Assembly-rooms afford everything that could be desired for the reception of the poultry. By the kind permission of Charles Reynard, Esq., the tent was erected on the beautifully-timbered grounds connected with that gentleman's private residence, adding in no slight degree to the general attraction.

By leave of Lieut.-Col. G. H. Thompson, and the officers of the East York Militia, the band of that regiment enlivened the whole proceedings throughout the day; and as the weather happily proved all that could be wished, everything proceeded as gaily as possible, bringing the sixth meeting of this Society to a most satisfactory close.

The *Spanish* fowls were unusually good, so much so, indeed, that we unhesitatingly pronounce them the best class we have seen for a long time past. Their condition as a whole was also good, and the twelve pens entered would have formed a great attraction to any show.

The *Grey Dorkings* were also excellent, though in this class not a few pens came "too late for competition," that would, if they had been present in time, have materially altered the awards. Two pens of chickens entered in this class by the Rev. J. G. A. Baker, of Bedford, are well worthy of the remark; they are the best Dorking chickens that have been exhibited this season.

In *Cochins*, Mr. Felton, of Birmingham, obtained an easy victory in Buffs, whilst Capt. Heaton was equally a-head of all competition in Partridge-coloured ones. Some extraordinarily good White ones were also shown by Mr. Dawson, of Hopton.

The *Hamburgs*, at Beverley, in pleasing contrast to those of late shows, were one of as good features as any in the Exhibition, both Pencilled and Spangled ones being equally commendable.

In *Polish*, Mr. Dixon, of Bradford, stood quite aloof from anything approaching to competition. Still the class was a good one.

The *Game Bantams* were a nice class, though we have seen better. All the other breeds of Bantams competed together, Mr. Harvey Dutton Bayley standing foremost with a pen of Silver-laced Sebrights, little short of perfection; several other pens of Sebrights being also good. Whites and Blacks were also well shown in this mixed class.

As faithful journalists, we are reluctantly compelled to mention a case of painted legs in Pen 189, belonging to Mr. George Osgerby, of Beverley. It seems last year the same unprincipled deception was practised, and at once detected. The birds, therefore, were disqualified during the appointment of the awards at that time; but this year, by a more careful manipulation, the birds at the outset obtained a second prize; but as afterwards this attempt to obtain an award was discovered, the premium was necessarily transferred to another pen, and a card distinctly stating the cause for disqualification remained attached to Mr. Osgerby's pen during the time the Show remained on view. Although Mr. Osgerby, by this renewed attempt, shows how little exposure seems to affect his own feelings, we trust that public opinion will set in strongly against such endeavours to deprive the honest exhibitor of his due reward, and eventually call into action some more telling punishment for such misdoings.

To say the *Game* at Beverley were excellent, is simply to reveal what every poultry-fancier anticipated; Messrs. Adams, Boys, and Julian, retaining among them quite the lion's share of the Game prizes at Beverley. The condition of most of the Game fowls was perfect, and the prizes were consequently secured only with difficulty. Where all were so good, we need only say, perhaps the Brown Reds were the most deserving. We could not conclude without rendering the just meed of praise due to the Game hens that were entered at Beverley.

The *Pigeon* classes were quite equal to usual, and it would be almost invidious to say which were the best classes, for the eye, even purposely seeking it, could scarcely rest on an inferior

pen. To Pigeon-fanciers, perhaps the Carriers, Powters, Barbs, Jacobins, Nuns, Trumpeters, Owls, Turbits, and Fantails, afforded such a treat as they rarely have the opportunity of enjoying.

The show of *Canaries*, *Goldfinches*, and *Mules*, was very good, even better than heretofore, and was consequently very attractive.

GAME (Black-breasted and other Red).—First, W. Boyes, Beverley. Second, H. M. Julian, Beverley. Third, H. Adams, Beverley. Commended, H. Adams; H. M. Julian; Capt. T. Percival, Whitby.

GAME (Duckwing and other Greys).—First and Second, H. Adams. Third, H. M. Julian. Commended, F. Sales, Crowle; G. W. Langdale, Leconfield.

GAME (Any other variety).—Silver Medal and First, H. Adams. Second, W. Dawson, Selly Oak. Third, H. Merkin, Driffield. (The Silver Medal is an additional prize for the best pen in the three first Game classes.)

GAME COCK (Black-breasted and other Red).—First, H. M. Julian. Second, B. Adams. Third, W. Boyes, Beverley. Highly Commended, C. W. Brierley, Rochdale; H. Adams; Mrs. H. Adams. Commended, W. Boyes; J. Sunderland, jun., Halifax; A. B. Dyas, Maderley, Salop.

GAME COCK (Duckwing and other Greys).—First, H. Adams. Second, W. Dawson. Third, W. Scott, Hotham. Commended, J. Gibbank, South Dalton.

GAME COCK (Any other variety).—First, H. Adams. Second, J. Woodhouse, Bridlington Quay. Third, F. Boyes, Beverley.

SPANISH.—First, H. Beldon, Bradford. Second and Third, R. Teebay, Fulwood, Preston. Highly Commended, J. Dixon, Bradford. Commended, S. Cotner, Fulwell, Monkwearmouth; J. Shorthose, Newcastle; T. Birch, Cornhill, Sheffield; E. Brown, Sheffield.

DORKING.—First, E. Smith, Middleton. Second, R. M. Stark, Hull. Third, E. Barrow, North Cave. Highly Commended, D. White, Driffield. Commended, Rev. J. G. A. Baker, Old Warden, Bedford.

COCHIN-CHINA (Buff, Lemon, and Cinnamon).—First, C. Felton, Eddington. Second, E. Smith, Middleton. Third, H. Bates, Edgbaston, Birmingham. Highly Commended, C. T. Bishop, Lenton, Notts; W. Whitty and Sons, Cottingham.

COCHIN-CHINA (Any other variety).—First, Capt. H. Heaton, Lower Broughton. Second, W. Dawson, Hopton. Third, C. W. Brierley, Rochdale. Highly Commended, J. Shorthose, Newcastle; J. Bolton, Edgbaston, Birmingham.

HAMBURG (Golden-pencilled).—First, S. Smith, Northwram, Halifax. Second, H. Beldon. Third, R. Hemingway, shelf, Halifax. Commended, H. Pickles, jun., Earby, near Skipton; T. Birch, Sheffield; J. E. Powers, Biggleswade.

HAMBURG (Silver-pencilled).—First, S. Fielding, Birch, Middleton. Second and Third, H. Beldon. Commended, J. E. Powers.

HAMBURG (Golden-spangled).—First, also a Silver Medal as an additional prize for the best pen of any variety of poultry exhibited, C. W. Brierley, Rochdale. Second, J. Dixon, Bradford. Third, A. Newton, Selsden, near Leeds. Highly Commended, H. Carter, Upperthong, Holmfirth; J. Crossland, jun., Wakefield.

HAMBURG (Silver-spangled).—First and Second, H. Beldon. Third, A. Newton, Silsden. Commended, R. Teebay, Fulwood.

POLISH.—First and Second, J. Dixon. Third, H. Beldon, Bradford. Highly Commended, H. Carter, Holmfirth. Commended, W. T. Addison, Sunderland.

ANY OTHER VARIETY OF FARMYARD CROSS.—First, Messrs. H. & G. Newton, Garforth. Second, H. Beldon. Third, J. Dixon. Highly Commended, H. Adams, Beverley; Mrs. White, Thearne. Commended, Miss F. C. H. Hawke, Womersley Park; R. Teebay, Fulwood.

BANTAMS (Game).—First, J. Crossland, jun., Wakefield. Second, E. Yardley, Wisewood, Sheffield. Third, H. Adams, Beverley. Highly Commended, W. Gofton, Driffield. Commended, C. W. Brierley, Rochdale.

BANTAMS (Any other variety).—First, T. H. D. Bayley, Biggleswade, Beds. Second, H. Beldon. Third, E. Yardley, Sheffield. Highly Commended, Mrs. Foster, Molescroft. Commended, J. Crossland, jun., Wakefield.

SPANISH COCK.—First, H. A. Hudson, Onsecliffe, York. Second, H. Beldon, Bradford.

DORKING COCK.—First, R. M. Stark, Hull. Second, Mrs. Seamons, Hartwell, Bucks. Commended, — Cryer, Cottingham.

COCHIN-CHINA COCK.—First, R. H. Nicholas, Malpas. Second, R. White, Sheffield. Highly Commended, E. Smith, Middleton. Commended, H. Bates, Edgbaston.

GOLD OR SILVER-PENCILLED COCK.—First, H. Beldon, Bradford. Second, J. Dixon, Bradford. Commended, J. Bilton, Cottingham.

GOLD OR SILVER-SPANGLED COCK.—First, H. Beldon. Second, J. Dixon. Highly Commended, J. Murgatroyd, Bishop Burton.

GAME HEN (Black-breasted or other Red).—First, H. Adams, Beverley. Second, W. Boyes, Beverley. Highly Commended, J. Crossland, jun., Wakefield; H. Adams. Commended, H. M. Julian, Beverley; C. W. Brierley, Rochdale.

GAME HEN (Duckwing or other Grey).—First and Second, H. Adams, Beverley.

GAME HEN (Any other variety).—First and Second, H. Adams.

SPANISH HEN.—First, H. A. Hudson, Onsecliffe, York. Second, E. Brown, Sheffield. Highly Commended, H. Beldon, Bradford.

DORKING HEN.—First, R. M. Stark, Hull. Second, Rev. J. G. A. Baker, Old Warden Vicarage. Highly Commended, J. Dixon. Commended, Rev. J. G. A. Baker; E. Smith, Middleton.

COCHIN-CHINA HEN.—First, W. Dawson, Hopton. Second, T. H. Barker, Hovingham. Highly Commended, E. Smith, Middleton; W. Whitty and Sons, Cottingham. Commended, Messrs. H. & G. Newton, Garforth.

BANTAM COCK (Any variety).—First, E. Brown, Sheffield. Second, R. M. Stark, Hull. Highly Commended, H. Bates, Edgbaston. Commended, C. W. Brierley, Rochdale; Miss Foster, Molescroft; W. Gofton, Driffield.

DUCKS (Aylesbury).—First, Mrs. Seamons, Hartwell. Second, S. Campin, Cottingham. Commended, C. Pense, Darlington; Mrs. Seamons.

DUCKS (Rouen).—First, H. Beldon, Bradford. Second, T. H. Barker, Hovingham.

DUCKS (Any other variety).—First, J. Dixon. Second, J. R. Jessop, Hull. Highly Commended, R. M. Stark, Hull. Commended, W. Witty, Driffield.

PIGEONS.

CARRIERS.—First, G. Pasby, Hull. Second, H. Beldon, Bradford.

Third, H. Yardley, Market Hall, Birmingham. Highly Commended, J. Forth, Dewsbury. Commended, J. C. Hullock, Beverley.

POWTERS.—First, H. Yardley, Birmingham. Second, G. R. Potts, Monkwearmouth. Third, H. Beldon. Highly Commended, F. Key, Beverley. Commended, E. Brown, Sheffield; H. Yardley, Birmingham.

ALMOND TUMBLERS.—First, H. Beldon. Second, Mrs. E. Southwick, Beverley. Third, J. C. Hullock, Beverley.

TUMBLERS (Any other variety).—First, H. Beldon. Second, W. Southwick, Beverley. Third, F. Key, Beverley. Highly Commended, J. C. Hullock, Beverley. Commended, H. Yardley, Birmingham.

BARBS.—First, T. D. Walker, Hoyslake. Second, H. Yardley, Birmingham. Third, Mrs. Ellington, Woodmansey.

JACOBS.—First, F. Key, Beverley. Second, Mrs. Ellington, Woodmansey. Third, T. D. Walker, Hoyslake. Highly Commended, W. Carlton, Howden. Commended, D. Causar, Erdington.

TRUMPETERS.—First, H. Beldon, Bradford. Second, F. Key, Beverley. Third, J. W. George, Beeston Podge. Highly Commended, F. Else, Bayswater. Commended, W. Carlton, Howden; H. Yardley, Birmingham; F. Key.

OWLS.—First, F. Else. Second, H. Yardley. Third, M. E. Jobling, Newcastle. Highly Commended, H. Beldon. Commended, J. C. Hullock, Beverley.

TURBITS.—First, F. Else. Second and Third, J. R. Jessop, Hull. Commended, M. E. Jobling; H. Beldon.

FANTAILS.—First, T. C. Taylor, Middlesburgh. Second and Third, J. C. Hullock. Highly Commended, H. Beldon; J. R. Jessop; F. Key. Commended, F. Else, Bayswater.

NUNS.—First, H. Beldon. Second, F. Else. Third, F. Key.

ANY OTHER VARIETY.—First, J. Wade, Leeds. Second, H. Yardley, Birmingham. Third, T. D. Walker, Hoyslake. Highly Commended, T. D. Walker; F. Key, Beverley.

CANARIES.

BELGIAN CANARIES.—First and Second, Miss Jameson, Beverley. Highly Commended, Miss Jameson; — Tritschler, Beverley. Commended, R. Jameson, Beverley.

MARKED CANARIES.—First, W. Coates, Beverley. Second, J. Pearson, Walker Gate. Highly Commended, Mrs. J. Dales, Beverley; Mrs. Pottage, Beverley; Mrs. J. Campey, Beverley; Miss M. Campey, Beverley; Miss R. Willis, Chalk Villa; Mrs. J. Pearson, Beverley; Mrs. Hobson, Fleming Gate. Commended, M. Kemp, Beverley.

ANY OTHER VARIETY.—First, — Tritschler, Beverley. Second, Mrs. Issott, Beverley. Highly Commended, Mrs. Tritschler. Commended, Miss A. Campey, Beverley.

NEST OF YOUNG CANARIES.—First, J. Campey, Beverley. Second, T. Rippon, Beverley. Highly Commended, R. Bailey, Beverley. Commended, W. Barker, Beverley.

MULES.—First and Second, Miss J. Boulton, Beverley. Highly Commended, J. Whiddall, Beverley. Commended, W. Grainger, Beverley.

REDCAPS.—First, G. Coates, Beverley. Second, Mrs. K. Fidler, Albert Terrace. Highly Commended, T. Hasker, Beverley; Miss Jameson, Beverley; K. Dawson, Beverley; J. Procter, Beverley; W. G. Drewry, Beverley.

The Judges for Poultry were—T. H. Smith, Esq., of Skelton Grange, York, and Edward Hewitt, Esq., of Sparkbrook, near Birmingham. For Pigeons—W. W. Boulton, Esq., of Beverley, and Fergus Ferguson, Esq., of Walkington, who also distributed the premiums to the singing-birds.

PROLIFIC EAST INDIAN DUCKS.

WITH regard to these Ducks which you have already mentioned, I wish to say that when the ducklings were only one or two days old, though the mother did not really neglect them, she showed a decided preference for the company of the drake; so much so, that I thought it best to confine him, as I had only two Ducks, and one was yet sitting. I saw nothing remarkable in her treatment of them, though she did not seem the most affectionate of mothers. The other Duck hatched on May 8th; and as the first had begun to lay on the 4th, I put both the old and young together in an empty shippin, when the Duck that had hatched the last brood at once took charge of the whole—twenty-two in all—the other Duck still going with them night and day, and appearing quite comfortable, although laying every morning. She has now laid fifteen eggs, and always in the nest. In fact, I have never known either of them to drop an egg abroad.

The one that hatched on May 8th began laying on the 15th, and has laid every day since that time, and they are both at this time going with the young, and leaving an egg in the same nest every morning.

I have not allowed the drake to go with them since I took him from the first lot. I have spoken to a good many farmers and others, but have not heard of such a case happening before.

—JOHN DUTTON.

PROLIFIC SWANS.

ON the basins attached to the canal at its junction with the Avon are a pair of Swans belonging to Mr. Rogers, which have proved so prolific as to be worthy a passing record. They were hatched in 1858, and in the spring of 1859 were placed in the basins covering about two acres. In the first year they took

frequent flights in the neighbourhood, and have been seen half a mile away flying over the city at a height of at least 100 feet, as judged by the tall spire of a church. However, they never deserted their allotted water, though it is close to other basins apparently more eligible and close to the river. They are never fed artificially except when the pools are iced over. Mr. Rogers, fearing their departure now each year, pulled out some of their pinion-feathers to prevent their flight.

In the year 1860 the hen laid seven eggs, hatched six cygnets, one of which was accidentally killed. In 1861 she laid nine eggs, and hatched nine, all preserved. In 1862 she laid ten eggs, and hatched eight, all preserved. In 1863 she laid nine eggs, and hatched seven, all alive and thriving. In the four seasons she has laid thirty-five eggs, and reared thirty young.—B. J. S., Bath.

SWARMING DIFFICULTIES.

I KEPT last autumn one stock in a Neighbour's cottage-hive, very weak, and to them, therefore, I united two other stocks from hives which I wanted to take, and fed liberally during the autumn by bottle, in spring with barley-sugar; but this hive is still very weak in point of numbers, though strengthening daily.

Query 1, Have I managed them properly?

I have also a large sort of bee-house, which I made myself, and which I think from all I have read, ought to be about the best kind. It is about 8 feet long, 5 high at back, and 3½ in front, all boarded-in with quarter-inch stuff covered with felt; all the back, which stands north, opening with two folding-doors, allowing three hives to face south, one east and one west.

In this house I had last autumn a strong stock of 1861 in an old straw hive facing west, A; a very strong stock of 1862 in a bar-box next to it, but facing south, B; also a strong stock of 1862 in straw hives next to this, and with the same aspect, C. These were all fed moderately in autumn and spring.

Now for difficulties. C became very crowded about the 1st of this month, hanging out during rain, so that many were drowned. I knew that I must be away from home a good deal, and wishing to manage the bees myself instead of leaving them to servants, I drove a swarm from C into an empty hive, and shook them out directly afterwards into a new Woodbury bar-frame hive. Only about a pint remained. The weather became cold and windy, so I fed them on barley-sugar; but they never worked at all, hanging in a miserable small lump to one bar.

Query 2, Had not I much better have left them to swarm according to their own devices? This morning about ten o'clock I found that C was about to swarm; they alighted on a gooseberry bush, and within five minutes B the bar-box sent out a very large swarm, which alighted on the same bush. I hived each lot separately, and in about fifteen minutes proceeded to remove them to their positions, when on lifting the first hive I found it absolutely empty, every bee having joined the other swarm. Both lots were so large that they much more than filled an empty hive. What to do I did not know. I first shook nearly half into another hive, hoping one queen might be among them; but no; they were all back in a few minutes. Then I took the Woodbury-box with the pint of bees in, and tilted that up against the brimming hive, hoping to get a good colony there. The only result was to drive out every one of those few, and then they retired themselves. After much shaking, changing, and great vexation of spirit on my part, I have now one hive settled in new quarters, so full that I have been obliged to put on a small super. The rest, I believe, have returned to the parent hives, and I almost think C may swarm again to-morrow, as I hear a deal of piping there to-night.

Query 3, What could I have done in this unfortunate dilemma?

Query 4, Why did the bar-box B swarm? I kept the little round piece of wood off the top all the spring, setting a bell-glass over the hole, to keep them cool. For the last five weeks the crown-board has been removed, and an adapter with a bar-super, as recommended by "A DEVONSHIRE BEE-KEEPER" in your answer to my questions at page 285 of last year's volume, has been put on, and in which they had begun to work; and besides this, the back doors of my bee-house facing north are set open every fine day, winter and summer.

Query 5, In this bar-super mentioned in last query the bees had begun some comb on two bars, but they are also continuing combs upwards from below. I have removed one piece. Am I to do so with all, or how prevent it?—A. W. B.

[1. You appear to have managed the bees in Neighbour's

cottage-hive very properly. They may, probably, yet do well. Your bee-house seems a good one.

2. You had certainly much better have left your bees to their own devices; but the reason of your failure was, that the queen did not accompany the driven bees. When you next attempt an operation of this kind, take care to drive out all the bees so as to make sure of the queen; then put the depopulated hive in the place of another strong stock, which must be removed to a new position, and if altered in external appearance so much the better. The returning bees will raise a queen from the brood left in the depopulated hive, and you will have succeeded in making a strong artificial swarm.

3. We never had two swarms issue at the same time and unite together, and, therefore, have no practical experience on the point. Many bee-books give directions how to act, but we think we should follow your example and leave them together, adding a super or some other temporary enlargement to the hive.

4. We cannot tell why your bar-hive swarmed. Bees are apt in this matter to exercise some of the capriciousness attributed to their sex—

"If they will, they will you may depend on't,
If they won't, they won't, and there's an end on't,"

unless they are in a moveable comb-hive, in which case it is easy to examine every comb of the depopulated stock to ascertain that no queen is present, and cut out every royal cell. This done, return the swarm by knocking the cluster out on a table close to the front of the old hive (which may be raised a little from its floor-board to admit of more rapid ingress), and replace the super, which may probably be completed before royal cells are again constructed, even if the intention to swarm be not altogether frustrated.

5. There is little objection to bees working upwards as well as downwards in a super; but if you desire to prevent it, the cells should be scraped off as soon as formed.

We really see no reason why you should be disheartened. Honey can be had from swarms as well as from supers, and if during some seasons you find the latter too troublesome, you have only to accept the good the gods send you in the shape of swarms, the bees of which may be expelled by driving, and added to other hives in the autumn whilst their stores are appropriated by the apiarian.]

DARK LIGURIAN DRONES.

I OBSERVE a statement concerning dark Ligurian drones that appears in the Journal of the 26th ult., in reply to a correspondent "J. L.," to the effect that the purest Ligurian queens will occasionally breed dark drones, which in turn may be the fathers of a more than ordinarily handsome Ligurian progeny. This precisely tallies with my experience, which, with your permission, I will proceed to narrate for the information of "J. L."

I commenced the season of 1862 with a stock of Ligurian bees procured from "A DEVONSHIRE BEE-KEEPER," in the autumn of the previous year. The workers of this stock were handsome, well-marked, and presented that transparent appearance so characteristic of the Ligurian bee; and yet the drones were uniformly of a dark colour, and, except from their superior size, were scarcely distinguishable from the ordinary black drones. This stock thrived amazingly during the spring of last year, so that in May they completely filled the twelve bar and frame hive into which they were transferred from "A DEVONSHIRE BEE-KEEPER'S" apiary. On June 1st, 1862, I took three artificial swarms from this stock, following the directions given in the pages of THE JOURNAL OF HORTICULTURE. These stocks, with the aid of a little feeding, have survived the winter, and are now in a very thriving state. However, the distinctive characteristics evinced by them are sufficiently remarkable to be worth recording.

No. 1 has a population of which a few are pure Ligurians in appearance, others precisely resemble the ordinary black bee, whilst the majority are hybrids, being but faintly tinged with the orange-coloured bar or stripe on the back which distinguishes the Ligurian variety. I conclude that these bees are the progeny of a pure Ligurian queen with a black drone. The "cross" appears to be a very good one, for they are now busily storing honey in a large glass super placed over the hive about a fortnight ago, and are far in advance of some black hives over which I placed supers at the same time.

No. 2 has a population in all respects similar to the ordinary black bee. This apparent anomaly can be accounted for only on

the supposition that the bees which clung to the two combs taken from the parent Ligurian stock, in order to form the artificial swarm, destroyed the two queen-cells that were upon these combs and raised a queen from the worker-brood of a comb taken from a hive of black bees, and which was added to the artificial swarm in order to strengthen it. The queen of this hive, as I have ascertained by inspection, is an ordinary black one, as was also that which headed a swarm from it last autumn, and which I returned at once, only for it to issue forth again on the following day in my absence and be lost.

No. 3 has a population of remarkable purity and beauty, and which must be the progeny of a Ligurian queen with a dark drone of the parent stock. I propose taking two artificial swarms from this stock as soon as the weather is sufficiently genial to afford a fair probability of success. It thus appears that my experience is entirely in accordance with your remarks respecting the dark-coloured Ligurian drone; nor do I think that "J. L." need be under any apprehension that the beauty and purity of his Ligurian stock has been deteriorated by an admixture of black blood, because the drones of the stock do not present that golden appearance which a perusal of Hermann's book on "The Italian Alp-bee" may have led him to anticipate. —RECTOR.

OUR LETTER BOX.

DUCKS' EGGS UNFERTILE (*A Constant Reader*).—Your gardener is right, a pan of water is all that is necessary for the well-doing of Ducks, unless they are wanted to breed. In that case, they must have water 18 inches deep. The lack of it not only causes unfruitful eggs, but often ruins the drake as a stock bird. If the eggs were unfruitful, they would not be rotten, but would be what are called clear eggs—that is, such as would be laid by hens or Ducks that had been kept away from the male bird. No amount of sitting spoils them, and after six or seven weeks they will remain apparently as fresh as the day they were laid. The propensity you name is not confined to drakes reared under a hen, nor did we ever hear it ended in consumption.

MANAGEMENT OF COCHIN-CHINA CHICKENS (*A Young Beginner*).—We allow our chickens to remain under the hen, but we are careful to remove the empty shells. Assuming that all eggs are put under the hen at the same time, there will be only a few hours' difference in the coming-out of the first and the last. This will be made a greater certainty if they are submitted to the water test a couple of days before the time of sitting expires. The good eggs only will be kept, and the hen will not be divided in her attentions between the chickens and the bad eggs which she believes to be good. When the hen is off her nest, take a pail three-parts full of warm, not hot, water, and place all the eggs in it. They will, of course, swim. After a few minutes the chickens will feel the warmth, and give notice of it by kicking about. Every egg that has life in it will be in motion, and will travel about in the most grotesque manner. Ten minutes are long enough, and as a rule those that remain motionless at the expiration of that time may be rejected. This process also facilitates hatching. Your feeding on chopped eggs and scalded oatmeal and barleymeal is very good. You may add a little bread and milk, and to early chickens, in very cold or damp weather, you may give beer instead of water to drink. Cochins do not care much to perch. They will, however, use low perches. Perching is more likely to produce crooked breasts than roosting on the ground. If fowls that adopt the latter have them, it is natural to them.

FOOD FOR POULTRY FATTENING (*G. J.*).—The cheapest and most advantageous food to use for fattening every description of poultry is ground oats. These must not be confounded with oatmeal or with ordinary ground oats. The preparation of them is peculiar to our great poultry county—Sussex. The whole of the oat is ground to a fine powder; nothing of any kind is taken from it. It requires a peculiar stone, dressed in a peculiar manner, to prepare it; but, when properly ground, one bushel of the meal will more effectually fatten poultry than a bushel and a half of any other meal. Mr. Agate, of Slaughman Mills, near Crawley, deals largely in it. The greatest point in fattening poultry is to feed at daybreak.

POINTS IN SILVER-SPANGLED HAMBURGS (*Gallus*).—All chickens do not moult their tail-feathers the first year. We think if all the Hamburgs in a class had red deaf-ears the Judges would be justified in disqualifying them all. There are degrees in combs. A single comb would be as fatal as a red deaf-ear; but where other points are good a small hollow must be overlooked. No crooked or lopping comb can be tolerated, nor can a faulty or deformed pike. The lacing of the wing, although desirable, may be wanting, but the barring must be perfect. The tail should be white tipped with black; failing perfection, the nearest approach must be chosen. Mrs. Pettat shows the best Hamburg cocks we ever see. You are right as to the lacing of the wing. It is most difficult to get without smudging the tail.

CANARY HEN NOT MATING (*Xendal*).—Your bird is barren, and it is useless to keep her with cock birds any longer. There are no means of making her breed.

LONDON MARKETS.—JUNE 8.

POULTRY.

The supply gradually but slowly increases. If trade were as good as it mostly is in June, there would be hardly enough, and prices would be high. As it is, they are lower than they were at this time last year.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	4	0	4	6	Guinea Fowl	0	0	0	0
Smaller do.	3	0	3	6	Leverets	0	0	0	0
Chickens	1	9	2	0	Rabbits	1	4	1	5
Goslings	6	0	6	6	Wild do.	0	8	0	9
Duckings	2	6	3	0	Pigeons	0	8	0	9

WEEKLY CALENDAR.

Day of Mnth Week.		JUNE 16—22, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.	Sun Sets.	Moon Rises and Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Barometer.	Thermom.	Wind.	Rain in Inches.						
				degrees.			m. h.	m. h.	m. h.		m. s.	
16	Tu	Frog flower flowers.	29.973—29.918	73—40	N.W.	.08	44 af 3	16 af 8	sets	1	0 15	167
17	W	Twayblade flowers.	30.103—29.857	71—47	W.	.12	44 3	17 8	58 a 8	2	0 28	168
18	Th	W. Cobbett died, 1835. G.	30.015—29.864	65—41	N.	.03	44 3	17 8	27 9	1	0 41	169
19	F	A. Munting born, 1806. B.	30.083—29.912	66—44	S.W.	.05	44 3	18 8	53 9	3	0 54	170
20	S	QUEEN VICTORIA ACCESSION.	29.896—29.807	61—44	W.	—	44 3	18 8	16 10	4	1 7	171
21	Sun	3 SUN. ART. TRIN. Q. V. PROG.	29.817—29.651	62—49	S.W.	—	44 3	18 8	36 10	5	1 20	172
22	M	Sun's declin. 23° 27'. N.	29.712—29.667	78—41	N.W.	.06	45 3	19 8	56 10	6	1 33	173

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 72.8° and 49.9° respectively. The greatest heat, 93°, occurred on the 22nd, in 1846; and the lowest cold, 30°, on the 20th, in 1855. During the period 132 days were fine, and on 120 rain fell.

USING THE WATERING-POT.



ERHAPS there is no implement used in a garden requiring so much judgment in its employment as a watering-pot, yet it is very often put into the hands of the lowest drudge, and to him are entrusted the plants of which he knows little more than that he is set to water them, and who usually regards profusion as the test of merit, pouring as much water into a thumb-pot as he would give to the roots of a Strawberry plant in the ground. That failures often arise from this need not be wondered at, and the much-hackneyed phrase of "Death in the pot" is too often applicable to the water-pot as well as to that for which the phrase was originally designed. It is, therefore, needless to offer any apology for bringing this subject before the readers of the JOURNAL OF HORTICULTURE at a season when the need for the water-pot is usually most urgent, or, in other words, at a season when the very existence of certain productions depends on its due employment.

First of all I will take a survey of the general purposes the water-pot is put to, and the prudence or imprudence with which it is wielded. Practice, aided by a certain amount of skill called cleverness, will enable most men to accomplish all mechanical operations with more or less precision and dexterity; the operation is purely mechanical, and is often performed with unwavering certainty while the mind of the operator is, perhaps, occupied with something else. Now, simple as is the operation of pouring water out of the spout, the operator ought never to do it without well considering what he is about; for though the vital power with which plants are endowed will enable them in many cases to overcome the evil effects of an overdose of the precious fluid, a too frequent repetition of this dose brings with it disease and ultimately death.

A careless handling of the water-pot is, therefore, to be deprecated; but there are other evils as well, for some very grave errors are fallen into from the lack of proper knowledge on the part of those who perform the duty of watering, and as this class is unfortunately a numerous one, let us lay the matter before them and point out the mistakes which are made.

Having said that indiscretion in watering does more harm than carelessness, we have only to look to the effect produced. Look at a poor cottager who plants his Broccoli on ground that has been cropped with Potatoes, and which in a dry season appears completely destitute of moisture. To remedy this it is not unusual to witness the water-pot or its substitute delivering water in great excess at the place where the plants are intended to be planted; perhaps a couple of quarts or more are poured in at one place, sufficient to thoroughly wet the cloddy

dry ground to the full depth or more that the dibber has to go, and while it is newly wetted the plant is put in, and the wet soil around it is pressed and kneaded as much with the dibber as it well can be, the few fibres of the plant being in fact completely sealed up, and surrounded by a substance not unlike grafting-clay. Perhaps an additional watering is given at the same time; but if dry weather continues the wetted spot becomes drier by evaporation, and also by the adjoining ground absorbing a part of its moisture, and in drying the soil recedes from the plant, leaving an air-hole somewhat less than that made by the dibber, but quite large enough to admit air down to the extreme tips of the roots, which have had no chance to take possession of the case-hardened ground. To remedy this the cottager, or inexperienced person, gives another deluge of water—very probably cold, hard, spring water, unfit in every sense for such a purpose. This drenching is repeated until the plant either succumbs, or, if its constitution survive the ordeal and it is enabled to take a feeble hold of the ground, its doing so is attributed to the assiduous waterings it has received. That no greater delusion can exist is rendered evident by comparing the final issue with results from plants differently treated as will be shown.

By way of example I will suppose the plant so treated to have been a Broccoli or some other plant of that kind, and very likely before planting it had been drawn from a bed where it had grown amongst many others, and where, consequently, the ground was dry with the exhausting crop upon it. Assuming the plant to have been simply pulled up, most of its fibres or, at all events, the points of them will have been broken off, and the plant reduced to the condition of little better than a cutting, as the elongated underground stem is scarcely a root in the usual acceptance of the term. Now, as a cutting, what chance has it to succeed by being dropped into a dibble-hole, and placed there in the alternating mediums of dry air and cold spring water? for the shrinking and contracting of the ground when dry, and its swelling again when wet, subject the plant to these changing conditions. Such is a case in which it may truly be said that "Death is in the pot."

Let us take another view of the operation, and see what can be done to secure a contrary state of circumstances. The plan is simple enough, and in many cases is attended with much less trouble than the other, and the result is more satisfactory, one or two conditions only being necessary to insure its absolute success. It is this: Instead of making the ground wet, and planting when it is so, try the reverse plan, and plant when the soil is dry; for if the soil be crumbly there will be no need of the watering-pot until the plant is in its place, and one good watering then will usually suffice. The fine dry earth being supposed to fill in all the interstices between and around the roots, and that without the kneading, which consolidates the ground in the case first particularised into something like grafting-clay, and assuming the root of the plant to be some 6 or 8 inches deep, and the ground after it is planted to be wetted that

depth, the plant is not likely to want water for several days; in fact, it is likely not to require watering any more, as it will not absorb any until it begins to grow, and it is not likely the ground will part with all its moisture by evaporation. If, however, the adjacent part not watered be exceedingly dry, and dry hot weather still continue, the dry soil will abstract moisture from the wet, and it may require replenishing again. The second watering, however, ought to be done at a time when Nature lends some assistance that way also. Should a slight shower fall, then give a good, sound watering to everything wanting it, or a dull day may be chosen for the purpose, or in the evening or early morning it may be done with like good effect.

The above is one of the examples of good and bad watering; but there are numberless others, to which it is well to call attention. Supposing a seed-bed did not promise well during the past dry spring—and there were many which did not—it is not unusual to pour on deluges of cold spring water in bright sunshine, flattening and caking the soil on the top of the bed into a hard mass, through which the seedlings in vain try to arise, and to remedy this, repeated applications from the water-pot are made, the water each time making little channels in the smooth, or rather water-worn surface of the bed. Now, this is not as it ought to be. Bright, unclouded sunshine accompanied with a dry, parching atmosphere rarely follows immediately after heavy rain. Even the sunshine after a thunder shower differs widely from the same sun shining on a bed newly and heavily watered by hand. To give artificial watering as near a resemblance as possible to the natural, the ground watered ought to be shaded from the bright glare of sunshine, and also from the over-drying effects of a north-east wind, which extracts moisture from substances that have none to spare as fast as the sun itself.

It is, therefore, prudent on all occasions, when practicable, to shade seed-beds that have received heavy waterings in dry weather until such time as the seeds germinate, or, perhaps, a change of weather may render shading no longer necessary. Some slight and temporary shading will be all that is necessary, giving at the time the bed is watered as much water as will moisten the soil at least 3 inches deep. After that, if it be necessary to repeat watering, let the quantity given be a liberal one again.

Most seeds are fed by moisture drawn by capillary attraction, and they will germinate and live with a much less amount of surface-moisture than will suffice for small plants that are newly planted. For example, a bed of small Celery plants newly pricked out requires more constant attention in watering than any description of plants that have merely vegetated on the bed they are then occupying. The healthy and vigorous roots of an undisturbed seedling will search out its food with unerring instinct, and until it come in contact with other roots of its own or a kindred kind, against which it has to withstand a keen competition for the food it is in search of, it will flourish and do well; but mutilate this root and transport both it and the plant it supports to a place foreign to it, and unless the elements be propitious some artificial assistance from the water-pot will be needed.

The foregoing are only two of the commonest instances in which the water-pot is applied judiciously or otherwise, but there are many others. A newly-planted tree, of which the roots have been cut somewhat severely, requires water, or is supposed to do so, for I am not certain that the distress it evinces arises altogether from the want of that fluid alone. Water and the necessary juices to maintain a healthy growth are two different things. I will, however, suppose a deciduous tree to have been planted in the autumn or winter, and a very dry spring or early summer to follow; a good watering once will in most cases suffice, provided that something be done to prevent evaporation. A good mulching being the best obstacle to that, it is hardly likely to require repeating, as when the tree begins to withdraw moisture from the ground for its support, moisture will be forthcoming, and to encourage this to be put off beyond the proper time will only create a greater evil than that which it is attempted to avoid. Watering newly-planted deciduous trees need not, therefore, be carried out later than the end of June, in an ordinary way, unless in special cases, or where, as in the following instance, other causes render watering more urgent, perhaps, than any I have hitherto named.

Perhaps there is no case in which the use of the watering-pot is attended with so much real benefit as where the ground is exhausted by an overcrop. Let us take, as an example, a Peach-wall, the border of which has maintained a heavy and exhausting crop of Peas, Cauliflowers, or some such moisture-

sucking vegetable, to the great detriment of the Peach, and assuming the ground to be very dry, a good watering will be of service. In fact, we might add, that a good moistening with manure water will be highly beneficial by restoring to the ground in some measure what the vegetable crop has extracted from it, and will give the Peach and other trees a chance to restore themselves to the position they would have occupied had vegetable crops not usurped the fat of the land. In this case the watering-pot is of essential service, giving the ground a thorough watering, adding some warm water to the mixture, if pond water be not to be had, so as not to chill the ground too much; and in the case of Peach trees, I would not advise any covering of the ground, but as soon as the surface of the soil is dry enough let it be stirred so as to give the sun power to play on the loose mould, and thereby warm the ground, and not cake and harden it. Peach, and similar trees require all the warmth of our English summers to perfect their growth, which need not be prolonged late in autumn. Hardier and more common things may be treated differently, or rather they may be kept growing later in the season, and, after watering, their roots may be protected by a covering of some kind.

J. ROBSON.

(To be continued.)

CONSTRUCTING AND MANAGING A MUSHROOM-HOUSE.

IN answer to the inquiries of "AN OLD SUBSCRIBER," we would say that there is no better plan for a Mushroom-house than that given in the "Cottage Gardener's Dictionary," as adopted by the late Mr. Oldaker; and if the treatment there recommended is carried out, there can be little doubt of securing plenty of good Mushrooms. As an old subscriber we could not honestly recommend you any work on Mushroom-culture, which we considered more clear and trustworthy than the articles which have appeared in these pages; in which not only the best methods, and the best materials have been described, but also directions given how to make the most of unsuitable materials when the best cannot be had. As there are several inquiries on the subject, and these chiefly relating more to our own particular practice than to general details, it may not be out of place to throw a few particulars together on this subject, and many of our friends seem to have come to the conclusion that there can scarcely be highly refined cookery without the assistance of Mushrooms in one shape or another.

Position of House.—The house adopted by Oldaker, and generally followed, is a lean-to house facing the north. Ours is a lean-to at the back of theinery. It was originally a close shed; and when we grew Mushrooms in it we had no means of giving extra heat, except by placing a fermenting heap of dung and leaves in the middle of the house, and giving an extra covering to the beds. By this means we could get plenty of Mushrooms from the middle of October to the middle of June. After that time in summer we could scarcely keep the place cool enough, and the Mushrooms came thin and sometimes maggoty, as the afternoon sun beat strongly on the slated roof. This roof, owing to the steam from fermenting matter, became rotten and unsafe, and in putting on a new roof the rafters were made of well-seasoned larch; lath was tacked on the lower side for plaster, the upper side was close-boarded before receiving the slates, and the space between the boards and the plaster was stuffed tight with clean straw, alike to keep heat in and heat and cold out.

After the second smooth plastering of the roof inside, instead of being whitened, it was, when dry, brushed over with boiled oil; and this has prevented any moisture from the beds penetrating or affecting the plaster or lath. This house is 30 feet long, 10½ wide, 12 high at back, and 8 high in front, above the ground level. Four strong cross-beams go at regular intervals from the top of the front wall, and are let into the back wall. The inside of the house is sunk a foot below the outside level, and is paved with tiles at the bottom. A pathway is set off in the middle of 3½ feet, and beneath that are two three-inch pipes. A nine-inch wall separates this space from the lower beds, and spars of wood across resting on sleepers on the top of this wall, make the pathway on a level with the ground outside. We had hot water substituted for the dung, as many were deterred from going to the Mushroom-house before, on account of the dung-heap, which was necessary in cold weather.

Such a house is just the size for having three beds on each side, like Oldaker's; and there would be no difference in the

arrangements, except that we merely give air at each end at the ridge, and instead of other openings in the roof, we have several slides and openings in the front wall, and hot-water pipes under the pathway instead of flues, which pipes are heated by a small saddle-back boiler, which also heats a vinery. We have, however, been satisfied with two beds on each side, one on the ground floor, and one on each side above it, because we were sure these would give a plentiful supply; and because there would be more room for the man to work, and the trouble of carrying up the manure in baskets by a ladder would be avoided. The heating pipes, however, have less influence on the lower beds, and if our subscriber wished to have three beds on each side, the bottom beds would just be suitable for Rhubarb, Sea-kale, Turnip-tops, and blanched Endive in winter. We generally take eight or twelve successions out of these beds. Those on the ground floor are generally made about 18 inches thick, those on the shelves 12 inches at the front, and 15 inches at back. We always make the beds on the shelves first, and then the heat from the lower beds helps the upper ones.

We confess that on turning in the hot water we had formed visions of a stylish house—brick piers, or rather iron columns along the passage, with longitudinal cross girders of iron to support a bed with sides of slate or flagstone; but we were forced to be content with upright studs of oak fastened to the sill that kept up the sparred floor at bottom, and a longitudinal plate over the cross-beams already referred to. Cross oak pieces, 3 feet apart, fastened to the upright studs at one end, and entering the wall at the other, support the floor, which consists of oak rails, 2 inches thick, and 3 inches wide, with spaces left between of $1\frac{1}{2}$ inch. A board about 11 inches wide fastened to the studs forms the front of the beds, and with a little repairs every year these beds have lasted some time. One advantage of this wood-sparred bottom for the beds is, that if a little earth is scattered over the rough litter which is used for the bottom, there will frequently be a fair crop hanging down from the bottom of the bed, as well as a thick crop on the surface. We have sometimes from these openings seen clusters 8 or 9 inches long hanging down, and some ten or fifteen in a cluster; and if not noticed in time they would almost force the slips out of their places however firmly nailed. We have, therefore, been contented with a simple arrangement; but if "OLD SUBSCRIBER" wishes for a nice house, we would advise the use of stone, or slate, instead of wood. Every year in summer we clean the house out, smoke with burning sulphur and vitriol, expose freely, and then whitewash, or rather linewash all the walls. We cannot do this just yet, as one bed is still in bearing, and our first bed out of doors, in an open shed, will not be in for a week or a fortnight.

Now as to materials. We have frequently stated how many and varied are the materials used; but for the present we shall confine ourselves to what is best for such shallow beds in houses. For this purpose the droppings of horses fed on hard food, as oats and hay, are the best, mingled with about a third of the shortest litter. If a third of the mass should consist of dried nodules of sheepdung, deerdung, or even cowdung, it will be all the better. We can scarcely ever obtain more than a casing of horse-droppings; but our whole experience points to them as the best for the bulk of shallow beds for abundant and continued bearing. These materials will heat violently when thrown into a heap fresh, and many allow them to do so to get rid of the rankness; but we prefer instead, to let such materials lie rather open and thin in a shed, as the violent heating takes away much of the nourishing properties in which the Mushroom delights. The less heat, therefore, such materials have before being made into a bed, and the less the bed itself rises above 85° to 90° , the better the chance of fine Mushrooms. When the materials are thus turned about and moderately dried, it will be well to make up the bed, though thus shallow, at two or three different times, beating firm at each time, as the exclusion of air will tend to keep the materials moist enough and prevent violent heating. The material must not be dust dry, or the Mushrooms will be poor; but it should be dry rather than wet, as if too moist the spawn will run to threads and perish. When we have imagined the material too dry, a casing of moist cowdung after spawning has given consistence to the Mushrooms. When the material was too wet, as it may often be in winter, we have wrapped each piece of spawn in a handful of short dry litter, and had fine crops.

Spawning.—Keep in view that the less violent the bed heats the better for the Mushrooms. If by a stick or a thermometer

you find that the bed remains steady at from 85° to 90° , it may be spawned by inserting pieces about the size of a walnut every 8 inches all over the bed, and about an inch below its surface. Beat firmly down after spawning. If the bed rise in temperature, just move the covering off the spawn till the heat lowers again. If the bed fall lower and seem to cool, put another inch of fresh droppings over it, and that will revive it; then, after waiting a few days to see if all is right, the bed may be earthed over. Fresh rather stiff loam is the best. This should be put on about 2 inches thick, well kneaded and beaten, which will make it from $1\frac{1}{4}$ to $1\frac{1}{2}$ inch in thickness. When well beaten and levelled, water it all over slightly, and then draw a clean spade over it to give it a smooth firm surface. We also often use turf with most of the grass removed, put on the bed grass side downwards, and a sprinkling of riddled soil over all to fill and consolidate the junctions; and though it answers very well, we are not sure if it is better than using stiffish soil. This enables you to clean your bed at any time. The Mushrooms will generally come quicker with a slight sprinkling of hay over the surface of the bed to keep it warm, but in a house heated by hot water this is less necessary; and at any time, especially in winter, warm vapour from evaporating-pans on the pipes is much relished by the Mushroom.

The chief secrets for securing plentiful crops are having the materials neither wet nor dry, but rather dry; preventing them ever heating violently; spawning when at from 80° to 90° ; never allowing the bed to become warmer, though, when the spawn is running, that will raise it a few degrees; and never raising the atmospheric temperature in the house above from 55° to 60° . Thus managed the average time from spawning to gathering will be about six weeks. In a hurry we have gathered in eighteen days. When the beds were rather cool and no means taken to heat them, we have known them take from eight to twelve weeks. When you know the spawn is all right in the bed and rather dry withal, and too cool for a quick crop, bore small holes a foot apart, water with water at 100° , and cover the bed with 2 or 3 inches of litter, and this will soon bring a crop up. Over-heating, over-moisture, and over-dryness are the chief causes of failure. In one place the only Mushrooms we ever saw came up naturally in inside Vine-borders. All the Mushrooms the Mushroom-house yielded for three years would not have served some of our cooks for a week: the material was always too moist, and the spawn was overheated. In another place the materials had extreme care; the droppings were dried and heated, and knocked about until all virtue had gone out of them, were beaten hard enough, and then scarcely ever heated enough, and the drying process was completed with a roaring fire that dried the atmosphere of the house like a killogie for corn. That house, with the materials more moist, and evaporating-pans, and steaming from the flue, ought to have supplied a township.

In *gathering* it is best to twist the Mushroom out by the roots, and never to cut unless when they come in bunches of unequal size.

In *watering* much care must be exercised. In winter scarcely any will be required if the atmosphere is kept moderately moist. In spring and autumn it is best to make small holes and pour the liquid pretty freely at back and front, as there will be a tendency to crack there. If this is not done, a little litter may be thrown on the beds, and the liquid allowed to percolate freely through it. The water may average from 60° to 70° . Of manure water we think the best is that obtained from sheep or deer dung, and in a rather clear state. Any Mushrooms on the bed should not be touched with it. We never like watering overhead in-doors on the exposed Mushrooms, as it has a tendency to make the skins leathery. In summer we were obliged to syringe walls and floor to keep the place cool, but we now prefer at such times a cellar, an open shady shed, or beds out of doors under the thick shade of trees. For winter, &c.—say from October to June, nothing is equal to a house facing the north, heated by flue or hot water. Were we under the necessity of having them in such a house all the year round, and if neatness, efficiency, and ultimate economy were the chief considerations, we would have all the walls fourteen or eighteen-inch hollow work, and would have double roofs, and then we could pretty well defy the heats of summer and the colds of winter, with the assistance of hot water when needed; and instead of wood, so liable to rot and decay, we would have iron columns and iron girders and bottom supporters, and the sides and bottoms of the beds of slate some $1\frac{1}{2}$ inch thick. Such a house would last as long as one wished, and seldom need repairs.

Much of the success, too, will depend on the spawn. Some of the best makers sometimes are deceived. From one of these we once had a supply, and we wrote back that to us it was just worth its bulk of manure. Good spawn should present a whitish appearance when broken, but the individual parts or strings should not be larger than the finest down or hair. If the white lines are many of them as large as common muslin sewing-thread the spawn is too far gone. What shall we say of that which has no other appearance than that of dried manure? In late volumes will be found full details as to the making of spawn. It is of little consequence being a year or two old, or several years old, provided it is good, and has been kept dry.

For *out-door beds* there must be more material, and for the bottom of flat beds and the centre of ridge-beds we need not be so particular. For both shapes, well wrought and sweetened dung, such as would do for Melons and Cucumbers, though not so moist, will do admirably, with or without a casing of an inch of fresh droppings. No material, however, excels old linings of Cucumber and Melon-frames, where the manure has heated itself into a dryish, caky, half-decomposed state. This, well shaken and broken, and built firmly together, will make a bed into which the spawn runs greedily. The same care must be taken as to temperature at spawning time, and the necessary heat must be maintained by coverings. We never could detect much difference in the quality of Mushrooms grown in the dark and in the light, but those who like to see the beds in a house, without a candle, may have a small window or two.

We have grown Mushrooms in all sorts of places out of doors and in-doors, as in sheds, stokeholes, floors of greenhouses, vineries, &c., and in all with much the same results, if due attention were paid to temperature at spawning time. We observe that growing them in pots and boxes has been noticed. Such has been done ever since we remember, and a good old plan it is. The pots should not be less than 15 inches, and the boxes should be 14 inches deep at least, as much through, and about 3 feet long, to move easily. They just require the same treatment as to filling and spawning as a bed, but their moveability is a great advantage—for instance, suppose a score of such pots or boxes were filled, spawned, and earthed in September and October, they could be kept in a cool dry place, slightly covered, and be placed in a slight hotbed, or by the side of hot-water pipes or a flue in forcing-houses or greenhouses. They could also be placed in a slight hotbed in a shed, or under a frame at any time, where the bottom heat would not exceed 80° to 85°, and the top heat not above 55° to 60°. Years ago, when hard driven, we have moved such boxes to the side of the heating apparatus in an early vinery; and if the Mushrooms came too quick and fast, we moved the box again into a greenhouse or a close shed—in fact, either by such modes, or even by beds out-doors or in-doors, any one who has spare shed-room, or a spare stall in byre or stable, may grow Mushrooms successfully, except, perhaps, in the months of July and August, as these months we have found the worst times for Mushrooms, except under thatched sheds or in cellars.

R. FISH.

INAUGURATION OF THE LATE PRINCE CONSORT'S MEMORIAL—JUNE 10TH.

THE aspect of the day harmonised with the occasion—there were clouds and rain and sunshine struggling for the mastery, and the sunshine prevailed. So was there sorrow tempering the pleasure of raising a fitting tribute to the memory of the Prince; but the sorrow passed away as the tidings spread that the Queen had seen and approved of the tribute—that time was softening her grief; and no one who looked upon the Prince of Wales, his bride, and his brothers and sisters, as they passed gently up to the Memorial, but felt that the cloud is less dense which shadows England, as it always shadows our land when grief afflicts its ruler, if beloved.

Our pages are not for the details of ceremonies such as was that, and we must not linger over it further than to record that the whole was well planned, the minor arrangements correctly executed, from the assembly in the balcony to the uncovering of the Statue; that there were seats for 10,000 of the nearly double that number of spectators who were present; that the banners of the various nations and corporations planted along the course of procession, added gaiety and importance to the Commemoration; that the presence of the Royal Family, the nation's ministers, the representatives of all nations with which

we are in amity, and of such a mass of British people, all testified that that day was one vast tribute of the heart to departed worth.

We copy the following narrative from our contemporary, the *Times*:—

Precisely at four o'clock, with characteristic punctuality, the Royal carriages drove up to the western entrance of the International building. The rattle of arms was heard as the guards of honour of the Grenadiers saluted, the band struck up the National Anthem, and a loud cheer greeted the entrance of the august party. The Prince of Wales was in the uniform of a General officer. The Princess, radiant and smiling as usual, was dressed in a pale mauve silk, with a rich lace mantle. The Princesses Helena and Louise were similarly attired. Prince Alfred presented a manly figure in the most elegant of all uniforms—that of the Navy; and the two younger Princes, Arthur and Leopold, wore kilts of Royal Stuart tartan. The Executive branch of the Memorial Committee and a deputation of the members of the Royal Society having been presented by the Duke of Buccleuch to the Prince of Wales, the procession was immediately formed and with trumpets sounding passed halfway down the nave, and then, turning to the left and ascending the gallery stairs, filed into a large temporary balcony, gaily decorated with garlands of flowers and scarlet hangings, which overlooked the Horticultural Gardens. The Royal party took their seats in the central part of the balcony, which projected beyond the rest of the structure. The appearance of the Prince and Princess of Wales was the signal for renewed cheering from the mass of spectators gathered in the open air.

The Duke of Buccleuch, at the head of the Council of the Horticultural Society, then approached the Prince of Wales and presented an address, which like reports at railway meetings, was "taken as read." It contained congratulations to his Royal Highness on his marriage, an expression of profound grief at the loss which the Society had sustained in the death of the Prince Consort, and assurances of gratitude for the interest which Her Majesty and the others members of the Royal Family had manifested in the institution. The address then proceeded thus:—

"The selection of the site for the Memorial of the International Exhibition of 1851 within this garden is a source of gratification to the Council; we thereby have in the view of our Fellows a lasting remembrance of their late deeply lamented President, and of the efforts he made to promote the welfare of the people of this land by so happily bringing the Exhibition of 1851 to a triumphant close. In the gracious reply which His Royal Highness made to the address which we had the honour to present to him on the 5th June, 1861, His Royal Highness advised and directed the Council to the course which should be followed to bring the undertaking to a successful issue. The principles he then laid down we have carefully treasured up and are endeavouring to carry out. Speaking of the union of the fine arts with that science which it is more especially our province to promote, His Royal Highness said:—'That which last year was still a vague conception is to day a reality, and I trust will be accepted as a valuable attempt, at least, to reunite the science and art of gardening to the sister arts of architecture, sculpture, and painting. This union existed in the best periods of art, when the same feeling pervaded and the same principles regulated them all; and if the misuse and misapplication of these principles in later times have forced again upon us the simple study and imitation of nature, individual arts have suffered by their disjunction, and the time seems now arrived when they may once more combine, without the danger of being cramped by pedantic and arbitrary rules of taste.' The excellent collection of works of art which now decorate the conservatory and arcades, and which your Royal Highnesses have already done the Society the honour of visiting, will show that we have not been unmindful of the precepts of the Prince Consort."

The address concluded with a statement of the satisfactory progress of the Society, which now numbers 3450 Fellows, and some praise of the "beauty of the gardens" and the "success of the promenades and shows," which would, perhaps, have come with better grace from other lips.

The Prince of Wales briefly thanked the Council for their address, and stated that a reply would be forwarded to them.

The united bands of the Guards then performed Lindpainter's stirring "Procession March," after which Mr. Godwin, Honorary Secretary to the Executive Department of the Memorial Committee, stepped forward and read the following address:—

"May it please your Royal Highness,—

"In the year 1853 a meeting convened by the Lord Mayor of London, Mr. Thomas Chailis, M.P., and presided over by him, was held in the Mansion House, to consider the propriety of erecting some memorial of the Great Exhibition of 1851, in connexion with a tribute of admiration to its great founder, the Prince Consort, your Royal Highness's illustrious and lamented father. The propriety of the step was at once recognised; and it was resolved unanimously, as well by the country at large as by the meeting, that the Exhibition 'was an event of the greatest importance to the nations of the world, by enabling them to observe the relative influence of science, art, and national characteristics upon production, by furnishing the means of a valuable review of the past, and by marking a new starting-point for the future progress of productive industry and giving it an increased stimulus.' The meeting saw, too, with the wise author of the

undertaking, that its tendency had been to promote useful intercourse between all peoples, and to induce in them feelings of goodwill towards each other. Money was accordingly subscribed for the erection of a Memorial, and active steps were taken to obtain a place for the intended monument on the site of the Exhibition in Hyde Park. Artists of all countries were invited to submit drawings and models in competition, and ultimately, out of nearly fifty, the design sent in by Mr. Joseph Durham was selected. The endeavours to procure a site in the Park having failed, we, the Executive Committee,—who had met with difficulties that might not have been anticipated—sought the aid of the Prince Consort. This was at once freely accorded on the condition, characteristic of his Royal Highness's noble self-denial, that the Memorial should be in no way personal, but one to which he could himself subscribe. The Royal Horticultural Society granted the fine site before which we now stand, on land belonging to the Royal Commissioners for the Great Exhibition, and therefore appropriate, the Commissioners themselves concurring in the grant; and from that time till the very last his Royal Highness continued to give consideration and personal assistance of inestimable value in completing and carrying out the project. Guided by his cultivated judgment, and aided by an increase of the funds, the design was enlarged and improved to its present form; and the last public act of the Prince in London was the approval of the statue of Her Most Gracious Majesty the Queen, then intended to surmount the Memorial. A letter from your Royal Highness after the painful event that had plunged the nation into grief conveying the will of the Queen that instead of Her Majesty's statue that of her beloved husband should crown the Memorial, and offering on your Royal Highness's own part to present the statue proposed to be thus placed—a letter which touched the heart of the country—enabled us to carry out the original desire of the subscribers, which was emphatically to offer a public and lasting tribute in connection with the Great Exhibition of 1851 to the good Prince—"to whose far-seeing and comprehensive philanthropy" (as now recorded on the face of the Memorial) "its first conception was due, and to whose clear judgment and untiring exertions in directing its execution the world is indebted for its unprecedented success." We take the liberty of expressing our great satisfaction with the admirable manner in which Mr. Durham has executed the commission confided to him. He has produced a work that we believe to be honourable alike to himself and to the country; and we trust this feeling will be generally shared in, especially by those eminent persons who assisted in the Great Exhibition, and whose names he has consequently recorded on enduring granite. In concluding this brief account of our proceedings, we tender most grateful thanks to the Queen for the interest Her Majesty has been pleased to show in the progress of this work, and the all-important assistance thus rendered us in our self-imposed labour. And we pray heartily and devoutly that Almighty God, in His goodness, long preserve Her Majesty's life—a life most precious to her loyal and loving people. It only remains for us to acknowledge most respectfully the anxious readiness with which you, Sir, accompanied by the illustrious Princess whom all the kingdom welcomes with open heart, and by your Royal brothers and sisters, have graciously taken part in the proceedings of to-day. We offer in the name of the subscribers our earnest thanks, and we solicit that your Royal Highness will now be pleased to command the uncovering of the Memorial."

To this address, the reading of which was interrupted by repeated applause, the Prince of Wales returned the following answer:—

"Gentlemen,—I have listened with an interest, which I am sure will be shared by all present, to the details which you have given in connection with the Memorial to my lamented and revered father, which we are assembled this day to inaugurate. As a son I cannot but be deeply affected by that part of your address in which you have referred to the beloved parent whose aid and counsel were never wanting when work was to be done, or when difficulties were to be overcome. (Cheers.) I am confident that our proceedings in commemorating so proud a year in England's annals would have met with his approval, and I am sustained in the part which in obedience to the Queen's commands I have undertaken, by the conviction and grateful sense that the sympathy of the entire nation accompanies me. I have now the pleasure of directing that the Memorial—of which the artist may well be proud—be now uncovered." (Cheers.)

The last words his Royal Highness concluded were scarcely audible beyond the splendid circle which were assembled round him in the balcony, but, as if intuitively, the whole assemblage turned towards the covered monument, from which neatly and quickly, as the boom of the first gun sounded, the covering was instantaneously withdrawn, showing a Memorial of which, as the Prince truly said, the artist might well be proud. It is entirely constructed of red and grey granite, as far as relates to the artist's design. The under base of Portland stone does not belong to the Memorial proper, and would have been better if in unison with the granite work, and the arches, keyed with unmeaning marks, materially detract from the composition. It is, we believe, the first public monument in which both red and grey granite, accompanied with bronze work, has been combined, at least in this country, and is in other respects new in its architectural features. The bronze statues have been produced by means of electro-deposition, which in this instance gives decided evidence of its importance in rendering the correct handling of the artist, as well as preserving the exact size of the original models, which could not be the case where the old method of casting is used.

The form of the Memorial is that of a temple, with projecting bases at four equal distances, of sufficient size to carry seated figures of 8 feet high. The entire height of the Memorial, exclusive of the under work with arches, is 42 feet; the width across the angles of the granite, 18 feet. The entablature is broken to correspond with the projections of the base. The four

seated bronze statues represent the quarters of the world in an allegorical manner, but divested of the old conventional type.

Beneath, and in front of each statue, there is a bronze medallion inserted in the granite base, the four medallions being enlarged copies from the prize medals awarded to successful exhibitors of 1851. Behind each of these statues arise two pilasters and two pillars of the Corinthian order, from stylobates placed above the heads of the statues. The capitals and bases of the columns are of bronze, the shafts of polished red granite, the effect of which is very good as an architectural decoration. Polished red granite is also introduced with equal effect in the crescent side panels of the base, and upon the circular side panels of the body of the temple. Upon the four latter panels there are inscribed in gilded incised lettering the principal features and facts relating to the first International Exhibition, including a record of all those who were actually engaged in any responsible position connected with the management of that national event, commencing with the Royal President of the Commission, the late Prince, whose statue in bronze surmounts the Memorial. It is 10 feet high, and in the mantle and with the insignia of the Master of the Order of the Bath—the Queen as Sovereign, being head of every other illustrious Order.

The statue of the Queen, as personifying "Peace," was intended originally to have been the crowning figure, but has been exchanged for that of the Prince by express desire of Her Majesty.

The frieze of the Temple bears upon it, in gilded lettering, two inscriptions,—one from Isaiah, "Let all the nations be gathered together, and let the people be assembled." The other is from the Psalms, "I will remember the works of the Lord surely I will remember Thy wonders of old." On the north tablet is the dedication of the Memorial itself, as follows:—

Erected
By public Subscription.
Originally intended only to commemorate
The International Exhibition
Of 1851,
Now
Dedicated also to the Memory of
The great Author of that Undertaking,
The good Prince,
To whose far-seeing and comprehensive Philanthropy
Its first Conception was due;
And to whose clear Judgment and untiring Exertions
In directing its Execution
The World is indebted for
Its unprecedented Success.
ALBERT FRANCIS AUGUSTUS CHARLES EMANUEL,
The Prince Consort,
Born August 26, 1819. Died December 14, 1861.

"He was a man! take him for all in all,
We shall not look upon his like again."

JOTTINGS FROM PARIS, 1863.

L'EXPOSITION DE LA SOCIÉTÉ IMPÉRIALE ET CENTRALE D'HORTICULTURE, ETC.

VEGETABLES AND FRUITS.

THAT the French people are much greater eaters of vegetables than ourselves a glance at any of their dinner-tables will sufficiently show—of vegetables not eaten, as with us, as adjuncts to more substantial viands, but forming courses by themselves, and served up in ways unknown to the ordinary dinner-tables of English folks. Not that I by any means accord to the French any abstemiousness as regards eating. Considering what a substantial meal their *déjeuner* is, and the number of courses of which their dinners consist, I am quite inclined to think that they are as great eaters as ourselves. Of course it does not look so much to have one dish at a time placed on the table as it does to have it loaded, as it too often is with us. But after all I think even as much meat is eaten with them as with us. However, this is a digression, suggested at any rate by the subject on which I wish to say a few words—the vegetables and fruits exhibited at the Exhibition of the Imperial Society of Horticulture.

France, enjoying as she does in the southern part of the country so warm a climate, and closely connected with Algeria, has the opportunity of obtaining all vegetable productions much earlier than we have; and the great markets at Paris show how, assisted by railroads, those capacities are brought to bear on the wants and luxuries of the great Parisian public: therefore one was surprised at not seeing a larger display of vegetables at any

rate than there was at the Show. I do not know whether there was any restriction placed as to the places from whence productions might be sent, although I should think not; but from the catalogue it appeared as if all the exhibitors lived not very far from Paris.

The most remarkable vegetable was unquestionably the Asparagus, and of these some enormous heads were exhibited; but although Mons. Louis Libéaut called them "*ameliorées*," I do not think they deserved the title. The heads were quite 4 inches in diameter, perfectly blanched, except about an inch of the top, which was the only edible part of them; and as I had the opportunity of tasting them I can aver that they were insipid and poor; and it certainly seemed a parody on those giants to notice, as I did on passing at the rear of the Restaurant des Trois Frères, which is supposed to know what is "*the thing*" in cooking better than any other house in Paris, that the *garçons de cuisine* were busily engaged in scraping off a good portion of the stalk, so as to leave them of a decent size to send to table. There was an interesting exhibition by one of the Argenteuil growers of Asparagus in its different stages of growth, from seedling plants to those eight years of age, at which time it appeared to me that they considered the Asparagus to be in perfection. They had been lifted up, roots and all, from the various beds, and one was thus enabled to see the character of the soil. This appeared to be almost exclusively sand, which had been enriched with plenty of dung and copious supplies of liquid manure. On inquiring at the great central markets the price of Asparagus, I found that that from Argenteuil ranked the highest, and that in proportion to its size was its price; the largest costing about two francs the bundle of about fifty heads, while a much more eatable vegetable could be obtained at about one franc the bundle.

As the various winter substitutes "*barbe de capucine*," &c., were now past, Cabbage and Cos Lettuce were exhibited as the principal ingredients for salads. There was one collection of seventeen varieties of Cos sent by M. Meurice, and also a seedling variety of his own raising; but I did not recognise anything very desirable in any of them beyond what we have ourselves.

There came one or two collections of Artichokes and Cabbage, but nothing among them that deserved particular notice. One could not help thinking that if some of our enterprising English growers were living in the south of France they would have contrived to have had many interesting subjects at the Exhibition, for many other vegetables were to be seen at the markets, and at such shops as Chevê's in the Palais Royal—as fine Tomatoes as could be grown, French Beans, Potatoes of good quality, &c.; so that with a little more enterprise and expenditure a really interesting exhibition might have been produced. As it was, a much better display could be seen elsewhere.

If the vegetables were indifferent I cannot say much for the fruits. There is a M. Ferdinand Gloede, a correspondent of your friend Mr. Radclyffe, who has written prodigious things concerning Strawberries, and I expected when I saw his name amongst the list of contributors that one would see a wonderful collection. He had a basket containing twenty-four varieties—but what a basket! It was divided into compartments about 4 inches square, and in each of these were placed some half a dozen Strawberries, many of them—most of them, indeed, I should say—English varieties. But oh! could Mr. Smith of Twickenham, or Mr. Turner of Slough, have seen the Sir Charles Napier, Sir Harrys, Victorias, &c., they would have wondered that any one calling himself a Strawberry-grower could have sent such poor specimens of his skill. It was interesting, however, in one point of view—viz., as showing that there is a probability of the French having something better than the "*fraise de quatre saisons*," which up to this time has been the sole stay of the lovers of the Strawberry amongst them. But it will be some time before they can match Mr. Smith's British Queen, in my humble opinion the greatest triumph of Strawberry-growing to be seen anywhere.

There were two collections of fruits, one having Vines, Green Gage Plum, Cherry, and Pines in pots—this was contributed by Madame Froment (veuve), of the Route d'Orleans; and another containing bunches of Muscat of Alexandria, and Black Hamburgh or Frankenthal, but very, very far inferior to those which were exhibited at the Crystal Palace on the 23rd ult. The only things which struck me as at all remarkable were the Pines, and this not from their size, but the smallness of the pots in which they were grown. There were some very tolerable Smooth Cayennes grown in pots not more than 9 inches across and very

shallow—at least I presume they were grown in them. This seemed to me (in my ignorance, perhaps), a good plan, for the immense space occupied by Pines militates against their growth; and I remember one characteristic set forth in favour of the Hurst House Seedling was, that it bore fruit in a small state, and consequently took up less room.

On the whole, then, it will be seen that I have not formed any very exalted opinion of the productions of French horticulture. The magnificent fruit which one sees later in the year, the delicious Chasselas Musqué of Fontainebleau, and the magnificent Pears of Touraine, are due rather to the excellence of the climate than the skill of the producer. In a season when skill really tells, when the difficulties of climate have to be overcome—then it is seen how indifferently French horticulturists contend with it, or at any rate how little enterprise they throw into their gardening. The fault is not theirs. The laws of property and the habits of the people are against them; and were they the same amongst us I feel that, notwithstanding the energy of our Saxon race, we should very likely fall into the same ways that they have done; and where, but for the number of amateurs in our own country, would the skill and enterprise of our nurserymen be remunerated?—D., Deal.

STRAWBERRY FAILURES.

THE following letter from a correspondent we have put into the hands of one of our weekly contributors, and append his reply thereto. Our correspondent, "A. Z.," says:—

"I have tried in vain to procure a crop on the most accreted plans, and in many kinds of soil, moving my beds to all parts of a small garden which produces excellent vegetables, and many kinds of fruit.

"I need not trouble you with my failures during past years, but will describe my last futile attempt two seasons ago. Determining not to do things by halves, I rooted out all my old Strawberry plants, and procured runners of Keens' Seedling and British Queen from a neighbour, with whom they bore abundantly, and whose garden lies on the same light, sandy stratum, and slopes as mine, to the south. These runners I planted on the old beds, having dressed them with maiden earth, old hot-bed manure, and soot; at the same time I put in others, without any preparation, in every part of the garden. At first, the plants having been previously neglected, looked dry and withered, but by the spring they had become fine plants, and blossomed profusely, but bore no fruit.

"For two seasons, whilst giving the fairest promise, I found the large trusses of beautifully expanded blossoms, some carrying upwards of fifty heads, almost entirely barren. Now, what can I do? I am too true to the craft to give in; at the same time I know I have already tried all common and many uncommon experiments, and the plants whether grown on the richest or poorest ground, present the same result of fine foliage, and profuse but futile flowering. Do you recommend any other sorts? I would be content even with the small Alpine, but I once failed in raising it from seed. I mean to profit by your hint, and plant out a few pots I have slightly forced this spring. Some of these did not flower, may I keep those in the same pots for forcing again?

"Having detailed my failures, I should like to take this opportunity of recording my successes, and thanking Mr. Anderson, to whose kind advice I in part owe them. He may, perhaps, remember a little correspondence we held on the cultivation of plants and Vines in the same house. Acting up to his caution not to attempt too great a variety, I have confined myself to such plants (and they are among the most beautiful) as were best suited to my means, and thus by constant care and growing experience, I contrive to keep up an unfailing succession of fair and fragrant flowers, from January to December, without entrenching on the requisites of the Vines, or preventing their yearly produce of a well-balanced crop of highly-flavoured fruit."

Although it is not difficult to define the cause of the want of success in the present season, it is very much so to account for the failures of former years. On dry, sandy soils, as I understand yours to be, and in an unusually dry spring like the past one, the blooms of Strawberries either become abortive, or the plant lacks the vigour necessary to swell the incipient fruit into growth, and a poor crop is the result. Even in our own case, I believe we should have had a very slight Strawberry crop had we not watered them thoroughly about the middle of May, and

again about the 1st of June. Some rain falling about the 20th of last month, and again in June on the 6th and following days, did certainly more good than the watering; but the latter was unquestionably useful. Now, if rain has not fallen in your district, and I am told it has not favoured all places alike, and you have not assisted the plants artificially with that necessary, water, the cause of failure in the present season is at once accounted for by the dryness of the weather. To some other cause, however, must be attributed the want of success in former years.

Dry, sandy soils, though certainly not the most suitable for Strawberries, are, nevertheless, good in certain seasons. The best crop I ever remember seeing was on such a soil, the season, however, favouring growth up to the time of ripening. This was in 1847. I have been told they have never been so good since, and, I believe, had never been so good before. The plants had evidently been well grown and perfected the year before, and the spring and early summer being alike favourable, the result was good. Now, in this case, success was more due to atmospheric influences, than to the character of the soil; in fact, it might almost be said to be in spite of the latter; but such cases are exceptions, a soil of a contrary description being more generally adapted to the Strawberry, and at the same time a somewhat showery season, especially in May and June.

One feature of our correspondent's practice was also bad—that of planting a new bed on the site of the old one, unless, as he says, the dressing with maiden earth and dung was liberal indeed; but the plants elsewhere in his garden ought to have been better: therefore, something else must be looked for to account for the failure of the former year. This is the more inexplicable, as our correspondent says that he generally has good vegetables in the same garden, and that a neighbour of his has good Strawberries on a soil, and in a situation of a like kind to his own. Some unexplained cause must assuredly have given rise to the failure of Keens' Seedling. The British Queen so often fails elsewhere, that its doing so in this case is not to be wondered at. Failures in forcing Strawberries are also not uncommon, and several batches of those first subjected to that ordeal often produce only indifferent crops; but this ought not to be the case with Keens' Seedling planted in the open ground, and we can only account for it by recording the instances of failure that have occurred to our knowledge from a treatment which it is possible the plants now in question may have been subjected to, which is this.

In the general instructions given for the culture of Strawberries, that of not digging between the rows is very often disregarded; the anxiety to give the plot a tidy and neat appearance induces many growers to trim the plants and dig the ground, thinking that some dung they add will more than compensate for the injury done to the roots, and that cutting away the old leaves induces fresh ones to grow. Now, in some deep soils suitable to the Strawberry, a slight digging may do so little injury that the effects will not be observable, the roots of the plants occupying the ground below being sufficiently numerous and vigorous to support the plant in health and strength; but this may not, perhaps, be the case when the subsoil is a hungry pernickious gravel, and the roots, or, say the best of them, are near the top. To destroy these roots by digging in winter after the plant has set its flower-buds in the preceding autumn is certain to be followed by failure. A fruit tree suffers in like manner, the bloom-buds prepared well expand; but the plant, deprived of part of its food, is unable to support them either in the process of setting or swelling into maturity, and either no crop or an indifferent one is the result. Assuming, therefore, that our correspondent's want of success arises from this cause, it is easy to see how it is to be remedied.

Some other collateral cause may have had something to do with the failure likewise, not the least unlikely being that barbarous practice, but rarely followed now, of mowing off the foliage in autumn. This I hardly expect was done in his case; but assuming the soil they are grown in to be somewhat light, dry, and shallow, the digging mentioned above is quite sufficient to account for the failure.

For the future I would advise our correspondent to clean off all weeds and runners, and instead of digging to cover the ground with some short rotten dung in winter, and if rain does not fall in sufficient quantity to give the plants a good watering at the time they are in flower; give them a good watering by hand, adding a little manure water at the same time. If he has fresh beds to make, I would say, Trench the ground deeply, re-

moving a part of the subsoil if it is unfavourable to the roots of the plants, and replacing it with other mould, plant some early runners much thicker than is usually done, and let them run together in a close bed.

I have known this plan answer well for one or two seasons when the plants must be removed; its supposed, and, in fact, real advantages are, that the plants do not run so much to leaf and are more fruitful, for in light soils the Strawberry being in a great measure fed by the manurial substances accorded it, is apt to run more to leaf than it ought to do. If our correspondent has not tried this plan, I would by all means advise him to do so and report the result.

He writes too well and clearly to afford any reason for thinking he has not adopted most other modes of cultivation, but this old plan answers in some places admirably. It would certainly be more advisable to turn out the plants in pots into the open ground than retain them as they are for another year; perhaps he may have some fruit in September, or at all events he will have excellent plants for another year. I should like to hear from him again on the subject.—J. ROBSON.

THE NORTHERN COUNTIES TULIP SHOW.

THE Show this year was held in this town (Manchester), on Tuesday, May 26th, at the Mechanic's Institute, in the large room. I regret to say the number of blooms exceeded the number of visitors.

The first prize was awarded to Mr. W. Lea, for a pan of six blooms—viz., Slater's Masterpiece, Sir Joseph Paxton, Mrs. Pickerrill, Atlas, Mrs. Lea, and La Vandyke. The premier Rose prize was awarded to the Feathered Rose Mrs. Lea. The second to G. W. Hardy, Esq., with Demosthenes, Sir Joseph Paxton, Violet Amiable, Fanny, Heroine, and La Vandyke. The third, Feathered, three blooms, W. Lea, with Masterpiece, Adonis, and Heroine. The fourth, J. Morris, with Charles X., Maid of Orleans, and Aglaia. The fifth, G. W. Hardy, with Demosthenes, St. Patrick, and Aglaia. The sixth, Flamed, T. Mellor, with Sans Ives, Lord Denman, and Aglaia. The seventh, G. W. Hardy, with Sir J. Paxton, Queen Charlotte, and Vandyke. The eighth, J. Morris, with Polyphemus, Van Amburgh, and Vandyke. The premier Bizarre, to T. Mellor, with Sans Ives. Two blooms, W. Downing, with Charles X. and Sans Ives; T. Halden, with Sir J. Paxton and Willson's King; and W. Bentley, with Charles X. and Aglaia.

FEATHERED AND FLAMED CLASSES.

Feathered Bizarres.

1. Sans Ives; J. Haigh
2. Sir Joseph Paxton; G. W. Hardy
3. Duke of Devonshire; W. Lea
4. Paul Pry; J. Poulson
5. Morning Star; W. Lea
6. Masterpiece; G. W. Hardy
7. Shakespere; S. Barlow
8. Charles X.; J. Morris

Flamed Bizarres.

1. Charles X.; J. Thornbry
2. Masterpiece; W. Lea
3. Sir J. Paxton; W. Lea
4. Lord Raglan; W. Lea
5. Apples; J. Bromly
6. Unknown; J. Poulson
7. Duke of Devonshire; W. Downing
8. Surpass Cattifalque; L. Ashmore

Feathered Byblæmens.

1. Maid of Orleans; Mr. Headly
2. Violet Amiable; G. W. Hardy
3. Adonis; W. Lea
4. Surpassant; S. Barlow
5. Queen of the North; J. Thornbry
6. David; H. Steward
7. Beinfait; J. Morris
8. Baquet; W. Lea

Flamed Byblæmens.

1. Lord Denman; G. W. Hardy
2. Constant; G. W. Hardy
3. Princess Royal; H. Steward
4. Prince Albert; G. W. Hardy
5. Atlas; J. Morris
6. Queen Charlotte; W. Lea
7. Victoria Regina; G. W. Hardy
8. Norah; H. Steward

Feathered Roses.

1. Industry; W. Lea

Heroine; W. Lea

3. Mrs. Sharpe; J. Walker
4. Mrs. Lea; W. Lea
5. Count Vergines; W. Lea
6. Lady Lilford; S. Barlow
7. Sarah Headly; H. Steward
8. Lady Crewe; Brooks

Flamed Roses.

1. La Vandyke; J. Morris
2. Kate Connor; G. W. Hardy
3. Aglaia; W. Lea
4. Martin's 137; G. W. Hardy
5. Lady Catherine Gordon; G. W. Hardy
6. Camelles; W. Lea
7. Triumph Royal; J. Thornbry
8. Unknown; H. Steward

Bizarre Breeders.

1. Emperor Nicholas; W. Lea
2. Omar Pasha; W. Lea
3. Titus; L. Ashmore
4. Sir J. Paxton; S. Barlow
5. Masterpiece; S. Barlow
6. No. 5 (Barlow's); S. Barlow

Byblæmen Breeders.

1. Adonis; W. Lea
2. Sante Sophia; T. Mellor
3. Unknown; W. Lea
4. Goudet Partout; S. Barlow
5. Bridesmaid; J. Cush
6. Duke of Manchester; W. Lea

Rose Breeders.

1. Juliet; H. Steward
2. Queen of England; W. Lea
3. Mrs. Lea; W. Lea
4. Ann Hathaway; S. Barlow
5. Mabel; T. Mellor
6. Mrs. Lomax; G. W. Hardy

There was a large number of blooms which covered three tables the length of the room. The day was dull, and a large

quantity of the flowers were not well open. A few of those to which prizes were awarded were past their prime, many of the blooms were small, and it was plainly observable that the frosts and cold winds had made sad ravages with the flowers, and many cracked petals were the result.

The premier rose, Mrs. Lea, a seedling of Mr. W. Lea, is a fine thing, after the style of Lady Crewe, but better, having stouter petals. Another Rose seedling of his, named Industry, is good and does him much credit. A bloom of Slater's Kate Connor, a flamed rose, shown by G. W. Hardy, Esq., was done well.

The seedlings shown were too much like the flowers from which they were raised, and require no remarks. Upon the whole, considering the season and the locality, the Show was respectable and ought to have been better patronised.

I mention the locality above. I do not think it possible to grow and blow Tulips so well there as in the south—not but it is possible to blow them clear, but not so fine, strong, and clear as in the south. I will instance one flower, the old Polyphemus, I have never seen it bloom as in the south, it seems another strain here. Some years since a bloom was shown at a Tulip Show in the Botanical Gardens in this town, by Mr. Turner, of Slough, it was all that could be wished for. Mr. Turner told me it was in the stock when he came to the Slough Nursery.

This brings to my mind many bygone years, when I have gone over the Tulip-beds at that nursery with Mr. Charles Brown, who was a persevering and enthusiastic grower of the Tulip, and from whom I first gained the rudiments of Tulip-growing. Although I brought a great many bulbs to this town, so great have been the drawbacks I have experienced, that I have entirely given up growing any but a few early Dutch bulbs in pots for decoration.

There was one improvement upon former shows that I cannot pass over, which was the entire exclusion of dirty bottoms, at least I did not see any as in former shows, not but in some cases a stained bottom can be looked over, when we bear in mind that some of the exhibitors are poor men, mostly weavers; but to their credit they can grow a Tulip fit for competition, can make a pleasure of employing their spare time over their Tulip-beds and gardens instead of wasting it at the beer-shops—and can with pleasure join in chorus with the Poet when he sings—

“Not a tree,
A plant, a leaf, a blossom but contains
A folio volume. He may read, and read,
And read again, and still find something new,
Something to please, and something to instruct.”

—DAHL, *Manchester*.

TWENTY SELECT ANNUALS.

I AM induced by a remark made by a past correspondent in THE JOURNAL OF HORTICULTURE, to send a list, to use his own phrase, “of the best twenty annuals.” His suggestion has produced a variety of answers, as to what are good and useful in this way, though none have attempted to confine themselves to his direct inquiry, and I make the attempt rather in a spirit of inquiry.

- | | |
|-------------------------------|------------------------------------|
| 1. Calendrnia umbellata. | 11. Lupinus Cruickshankii. |
| 2. discolor. | 12. Leptosiphon densiflorus. |
| 3. Rhodanthe Manglesii. | 13. Clintonia pulchella. |
| 4. maculata. | 14. Portulaca caryophylloides. |
| 5. Martynia fragrans formosa. | 15. Globe Amaranthus. |
| 6. Schizanthus retusus. | 16. Abronia umbellata. |
| 7. Nemophila insignis. | 17. Datura ceratocaulon. |
| 8. Helichrysum macranthum. | 18. Bartonia aurea. |
| 9. compositum maximum. | 19. Dianthus giganteus Heddewigii. |
| 10. Nolana prostrata. | 20. Phlox Drummondii. |

—W. EARLEY, *Digswell*.

HARDINESS OF EURYOPS PUNCTATUS.

I THANK you for your information about my plant, Euryops punctatus; but I cannot find out anything about Euryops in any of my books of reference (Miller, Don, Sprengel, Paxton, and Cottage Gardener's Dictionary); De Candolle's book I have not.

You inquire about its proved hardiness. I believe it has only been exposed this last winter; but though on the whole this has been a mild winter, yet we have had some trying times during it. In November we had frosts so hard and continuous, that we had three days' skating; and I always find that November frosts (coming while the sap is still up), are most

destructive. Then we have had several short frosts, and one especially at the end of April; yet in none of these did the Euryops even droop its shoots, and it is now a good bush, 4 feet high and covered with flowers. At any rate I am sure it does better to keep it out of doors and to take cuttings from it, which strike very readily, and so keep up young plants.

I live between Bath and Bristol, which would be considered sheltered. No doubt I can grow many things that they could not grow in Yorkshire, yet we suffer very much from early frosts, and still more from late ones; for our plants shoot early and are then cut off.—H. N. E.

[Euryops is allied to Othonna. De Candolle thus describes this species:—Glabrous; leaves filiform, deeply punctured, often trifid, sometimes sub-pinnate, pedicel three or four times longer than the leaf; involucre scaly; achæmium downy. Found near a river in the Carras desert.]

FIXING AMMONIA BENEFICIAL.

IN the extracts you make from the Rev. C. Reynold's letter on ammoniacal liquors, published in your Journal of the 26th ult., there is one important point in which I think the writer is in error. I allude to his idea that it is equally beneficial to apply solutions of ammonia in winter, as to fix it according to Liebig, and use it when required.

It is true that cold water absorbs an enormous quantity of ammonia and gradually parts with it as the temperature is raised, and at about 70° or 80° little would remain; yet let the temperature be what it may, my conviction is great loss must occur by the evaporation with aqueous vapour, &c. I think it, therefore, far preferable to fix it; or in other words, convert it into a salt that at ordinary temperature is not volatile; and the sulphate as suggested by Liebig is the best.

The addition of gypsum (sulphate of lime) or dilute sulphuric acid will attain this object. It is necessary to be careful in purchasing gypsum, as I have known persons disappointed in having chalk and rubbish palmed upon them instead of the genuine article.

Chalk may easily be detected by its effervescing with acid; but the best plan is to purchase only of respectable vendors.—AMATEUR.

PERUVIAN BARK TREES.*

THIS is the first practical work upon the cultivation of the Peruvian bark trees which has ever been published; and although Mr. McIvor with judicious modesty says that he does “not presume to furnish a perfect guide to their management,” yet we can say confidently that any good gardener having this pamphlet in his hand—containing a full record of successful cultivation—need be at no loss as to how he should manage and propagate the species of Cinchona which furnish Peruvian bark. Site; aspect; climate; elevation; propagation by seed, layers, cuttings, and buds; formation of nurseries; cultivation; planting; species yielding different barks; and directions for transmission of plants, and their treatment when they are received, are all fully particularised and illustrated by six lithographs of some of the modes of propagation and pruning.

It is satisfactory to know that although the Neilgherry bark is from trees no more than two years old, yet it yields as much of quinine and cinchonine as do the barks from maturer trees in South America. This has been ascertained by Mr. Howard's analyses. It is also satisfactory to know that attention is roused in India to the culture of these trees as a commercial object, and that about 50,000 plants have been sold or applied for. Mr. Markham may well be gratified by this ripening result of his once-unjustly depreciated efforts.

The following is a list of the species, with particulars of their qualities, cultivated in the Neilgherry garden:—

“CINCHONAS YIELDING QUININE.

“*Cinchona succirubra*, the ‘Cascarilla colorada’ or ‘Genuine Red Bark’ of commerce. This species grows to a lofty tree, and is the most valuable known, being the richest in alkaloids, which generally amount to as much as 3 to 4 per cent., and thus ‘fair average samples are valued in the market at more than twice the

* Notes on the Propagation and Cultivation of the Medicinal Cinchonas or Peruvian Bark Trees (printed and published by order of the Government of Madras). By W. G. McIvor, Superintendent of Government Cinchona Plantations, Neilgherries. 1863.

price of *Calisaya* bark.' The present price of Red Bark varies from 2s. 6d. to 8s. 9d. per pound of dry bark. This sort is also hardy, its range of growth extending from 3000 to 8000 feet; the plant, according to Mr. Spruce, prefers open ground with 'plenty of air, light, and room, wherein to develop its proportions; the bark is thin in proportion to the diameter of the trees when growing at low elevations, and thick in proportion when growing at high elevations.' The amount of 'alkaloids' is also much affected by elevation. Mr. Spruce informs us that Señor Cordovez, who has analysed the Red Bark, collected at various altitudes, found that the greater the height at which the tree grows, the larger is the proportion of alkaloids contained in the bark.'

"*Cinchona Calisaya*, or 'Yellow Bark of Bolivia.' This species grows to the height of a large forest tree, and was long considered the most valuable of all the medicinal barks; and certainly it was so until the discovery of the Red Bark. The present price of *Calisaya*, or Yellow Bark, varies from 2s. 10d. to 7s. per pound. Of this species we have evidently two varieties very distinctly marked, even when growing under the same conditions. According to Mr. Markham and Dr. Weddell, 'the tree *Calisaya* grows on declivities and steep rugged places of the mountains 5000 to 6000 feet above the sea, in the hottest forests of Carabaya and Bolivia.' Subsequently, Mr. Markham, in writing of this species, states—'There can be no doubt that the correct method of cultivating the *Cinchonas* is planting them out in the open with plenty of light and air. They may require shade from the direct rays of the sun at first. The only really fine well-grown plant of *Cinchona Calisaya* that I saw in Carabaya was one that had been planted in a small clearing entirely exposed; those in the forest were poor straggling things in comparison.'

"*Cinchona Uritusina*, the 'Cascarilla fina,' or 'Original Lora Bark,' introduced by J. E. Howard, Esq. This species, which in the days of La Condamine was a noble and lofty forest tree, is now almost extinct, the trees of a large size having entirely disappeared from the Andes; it is rich in alkaloids, good specimens giving a total of 3.8 per cent., and in this respect it equals the *Calisaya* bark of Bolivia; it was common on the mountains of Uritusina, and grows at elevations from 6000 to 8000 feet. A general opinion prevails among the *Cascarilleros* that the bark of this species 'differs in quality according as it is exposed to the morning or evening sun.'

"*Cinchona Condaminea*, the 'Cascarilla Colorada del Ray,' or 'Cascarilla Amarilla, the 'Rusty Crown Bark' of English commerce, and of equal value to the preceding species, to which it is nearly allied, inhabiting the same localities, but perhaps growing at greater elevations. In the days of Pavon this was a slender tree of little more than 24 feet in height, and is considered to be the species that produced the bark which cured the Countess of Cinchon. At the present time, Mr. Cross informs us, 'but few trees are to be seen of these dimensions. The plants from which the bark of commerce is now taken are in general not more than 8 to 10 feet in height. When the plants are cut down three or four young shoots, or suckers, in general spring up; but this does not always happen, as some of the more industrious *Cascarilleros* frequently pull up the roots, and bark them also. The bark is taken from the smallest twigs, thus the annual growths are sometimes taken, especially if they are strong.' Mr. Cross also observes 'that the alluvial deposit in the ravines where this species is found growing, is shallow, and in many places not more than 6 inches in depth.'

"*Cinchona crespilla* (C. *crispa* Tafalla), or 'fine Crown Bark.' This species is a small shrub, and contains a smaller quantity of alkaloids than the preceding; still it brings a high price in the market, being a 'very fragrant and pretty-looking bark. It grows at great elevations (from 7000 to 10,000 feet) in a deposit of peat, and where the temperature sometimes falls to 27° Fahr.

"*Cinchona lancifolia* (from Java), or 'Pataya Bark.'—This is a valuable species, it is also hardy, and easily cultivated, inhabiting the high and cold regions of the Andes. Dr. Karsten observes that 'it descends only to a height of 2000 mètres (6170 feet) above the sea, from the cold summits of the mostly snow-capped mountains, where it sometimes reaches the upper limits of the growth of trees—that is, 3500 mètres (10,797 feet).' Mr. Howard observes that 'this species produces a bark which rivals in their rich product of quinine the barks of Bolivia, and, consequently, commands a very high price.'

"CHINCONAS YIELDING CINCHONINE.

"*Cinchona nitida*, 'Quina cans legitima,' or 'Genuine Grey

Bark.' This is a lofty tree, abounding in the higher regions of Huanuco; its predominant alkaloid is Cinchonine, and is, consequently, of less value than the preceding species, which belong to the class yielding quinine: the analysis of the bark from which our seeds were gathered gave 2.22 per cent. of alkaloids, consisting chiefly of Cinchonine; Mr. Howard has, however, found quinine in samples of the fine Grey Barks of commerce. This species grows in exposed places at elevations from 6000 to 8000 feet, and is said to delight in 'free air, cold, water, and sunshine.'

"*Cinchona*, species without name. Allied to the above, and raised from seeds gathered by Mr. Pritchett, near Huanuco. Mr. Howard is of opinion that this species may prove to be identical with *Cinchona obovata* of Pavon. It is said to be a 'good bark,' and extensively imported with the Grey Bark of commerce.

"*Cinchona micrantha*, the 'Cascarilla Provinciana,' or 'Grey Bark.' This is a lofty tree, inhabiting warm and damp forests, where it attains a great circumference; one tree frequently yielding from 200 to 250 lbs. of dry bark. The bark is generally rich in alkaloids, yielding as much as 2.70 per cent. principally consisting of cinchonine.

"*Cinchona peruviana*, the 'Cascarilla Pata de Gallinaza,' or 'finest Grey Bark.' This species attains the height of an ordinary-sized tree in the forest of Cocheros, where it is still abundant, growing at a lower elevation than *Cinchona nitida*, and yields a bark of considerable value; the bark of the trees our seeds were collected from, when analysed by Mr. Howard, yielded 3 per cent. of alkaloids, comprising chiefly cinchonidine and cinchonine. It thus ranks among the most valuable of the Grey Barks."

HEATING GARDEN STRUCTURES.

(Continued from page 416.)

A FLUE to heat a house 21 feet by 15 will consume four tons of coals on an average of years, some more, some less, for the purposes of keeping out frost and damp, which at 7s. 4d. per ton, the price we give, is £1 9s. 4d., sweeping, whitewashing, and repairing, 10s., £1 19s. 4d.; but as we have Vines as well as plants a little fire heat will not be amiss in cold weather when the fruit is setting, nor out of place when the wood is ripening: therefore, two tons more coal, equal to £2 14s. Should the house be kept at forcing temperature, at least a bushel of coals will be consumed per diem, and in severe weather nearer four than one. These matters are of small significance when compared with the amount of care and attention a flue requires, and the many misfortunes their owner and attendant are heirs to.

A house 30 feet by 18 may be heated by a flue as advantageously as one of smaller dimensions; but the fire necessary to heat it would heat the piping of three houses of its size, and thus effect a saving of two-thirds.

Three thousand feet of air are as much as can be heated with one fire to advantage, and in houses that contain more, one fire will not suffice to keep out an ordinary winter's frost.

We have a house containing 7640 cubic feet heated by two flues, and in the memorable year 1860, or winter of 1860 and 1861, it consumed one ton of coke per week on an average of fourteen weeks; and it is not exaggerating to state, that although the flues were red hot, perceivable in daylight, the house was barely frost-proof. In fact, on Christmas day at 8 A.M., when the thermometer outside registered 3° below zero, that in the house only indicated 36°, and the fires had been kept going all night like a blasting-furnace. Owing to my master's hospitality, I had my nervous system lulled, or the sight of a flame issuing from a flue 18 yards in length might have tried it severely. I was called out of bed to see a sight like this at 4 A.M., and to exchange courtesies with my worthy stoker, the policeman.

But to dismiss about flues. I have no hesitation in saying, that to heat a large space they are extremely troublesome; and I cannot see any reason for a gardener having to pass restless nights when a little contrivance and a few pounds extra would remove a great deal of anxiety, and prevent him dreaming of blown-up flues, frozen houses, and a "row" afterwards. Still, I do not say a flue will not heat a house of small size and give satisfaction. What I wish to convey is this—large houses and a number of houses can be heated more satisfactorily and economically by hot water than with flues of any kind, and that the quantity of fuel necessary to heat a flue, warming a house no matter how small, will heat piping sufficient to warm double

the quantity of space heated by the flue. Besides, where a high temperature is required a boiler is more economical than a flue.

HOT WATER.—To heat a greenhouse 21 feet by 15, it is necessary to have two four-inch pipes along both ends, and in front, if a lean-to, or all round if a span.

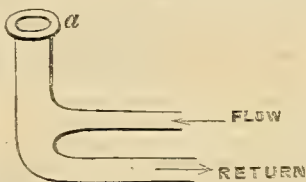
	£	s.	d.
Saddle or cylinder boiler, &c.	3	0	0
72 feet of four-inch pipe, best quality	3	12	0
Doors, grate bars, &c.	1	6	0
Boiler-setting, with materials	1	0	0
Chimney	0	12	6
Pipes fixing at 3d. per foot (if men come a distance something extra)	0	18	0
	£10	8	6

In the above estimate, everything is good, substantial, and calculated to last the owner's lifetime. But there are cheaper ways than this. Substitute a small Arnott-stove boiler for the saddle, use pot-pipes, cement the joints, and you will have a cheaper and a better apparatus than any kind of flue whatever, for any kind of hot-water apparatus is better than flues however well constructed.

A small Arnott-stove boiler can be had for 30s., and a yard each of four-inch iron pipe connected to flow and return, to which the pot-pipes are joined, is requisite. The cost of the whole for a house 21 feet by 15, is as follows:—

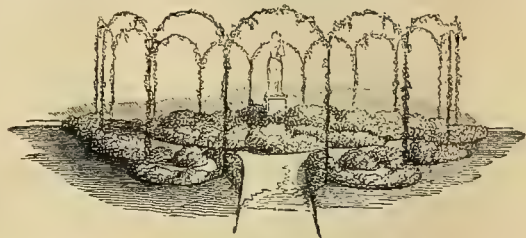
	£	s.	d.
Arnott-stove boiler	1	10	0
Doors, grate, &c.	0	16	0
Fire-bricks, common ditto, mortar and chimney, setting boiler, &c.	1	5	0
72 feet four-inch glazed pot-pipes	1	0	0
6 feet iron pipe	0	10	0
Cement for joints	0	8	0
Fixing pipes, tarred rope, &c.	0	11	0
	£6	0	0

The boiler can be inside at the option of the proprietor, and a hotbed can be formed there to strike cuttings and raise flower-seeds without the trouble of making a hotbed of dung; but the doors for the sake of cleanliness should be outside. In connecting the pipes to the boiler it is of importance to allow a rise of 1 foot from the boiler. Some do this along the pipes, gradually allowing them to rise from the boiler to the flow-box; but I prefer the rise at the boiler through a bend, and then carrying the flow as nearly level as possible—that is, only allowing a rise of a few inches so as to let the extremity be the highest point to let the air out of the pipes at the feeding-cistern, which is a somewhat novel contrivance—thus, being a bend with an additional branch, I do not see any necessity for a cistern, neither would I have one unless the boiler is large, and, consequently, requires a considerable quantity of water to provide for the waste arising from circulation and evaporation. All that is usually needed is a hole through which to pour water into the pipes (as at *a* in the engraving), and that, of course, should be at the highest point, thereby doing away with the necessity for air-pipes. The return-pipe will, of course, be raised from the boiler gradually, so that it will be of the desired height at which the pipes are to run by the first bend; and from that point allow a rise of 6 inches in every 7 yards. The flow-pipe will rest on the return-pipe until it comes to the point where the return falls to the boiler, when the latter will be carried to meet the flow at its junction with the boiler without dipping; but should it dip it is not improbable that in filling the pipes with water this will run up the return-pipe and meet the current coming down the flow at the dip, and so prevent the water from circulating owing to the air being confined there; but even should the air rise (as it may with a little pressure), to the feeding-pipe or cistern, the water will not circulate so freely as when it rises from the boiler without dipping, and not at all if air be confined at the dip or anywhere along the pipes so as to cause an empty space in the pipe. —G. A. (To be continued.)



ductive of a light and airy elegance that garden artists of greater celebrity would not do amiss to profit by. Unfortunately for good taste, gardens of this kind in general exhibit such a crowding, clumsiness, and incongruity of disposition in the several figures, as to render the *tout ensemble*, in good perspective, the very reverse of elegant, comprehensive, and dignified. Too many figures in a plan, or the separate parts of the latter too widely spread asunder, when the entirety should rather be expressive of nicety in design, can but result in deformity and dissatisfaction when displayed in practice on the ground, however well suited the same arrangement might previously have appeared on paper to the uninitiated in such matters.

The vignette exhibits in perspective the accompanying ground plan circumscribed with trellis arches about 9 or 10 feet high, formed of stout rod-iron, inserted into blocks of stone



beneath the surface of the ground; and a marble figure of "Flora" is presumed, not inappropriately, to occupy the centre of the parterre. The Pelargonium garden at Oakley, the Duke of Bedford's, is thus circumscribed with iron arches; and the airy elegance thus imparted, when entwined and festooned with hardy and summer greenhouse climbers in great variety, is not the least attractive feature of the scene. A seldom used, but most classic plant for this kind of decoration is the Grape Vine. And when in early autumn the foliage of various hardy species of Vitis assume a variety of tints, and ripe and unripe bunches of Grapes in "bacchanal profusion reel to earth," or rather depend from these arches, partly concealed by green, and red and green, and purplish foliage, the effect is extremely pleasing, reminding one of Byron's lines on Italy—

"Who love to see the sunshine every day
And Vines (not nailed to walls) from tree to tree
Festooned, much like the back scene of a play."

The only difference being that the sun, perhaps, does not shine so brightly as it does in Italy, and that our Vines, instead of being "festooned from tree to tree," are merely trained from arch to arch. In addition to the Grape Vine, Clematis, Jasmine, Roses, Virginian Creepers, Honeysuckles, and other hardy climbers, are rendered decidedly more elegant and graceful in summer time by having such half-hardy greenhouse creepers as *Maurandya*, *Lophospermum*, *Rhodochiton*, *Loasa*, *Tropeolum*, *Cobaea*, &c., planted at their base annually, and induced to loosely enwreath themselves and ramble over their more sturdy compeers.

The flower-baskets also constitute an interesting feature in connection with the Pelargonium garden at Oakley; and, since this particular kind of ornament is not in very general use, the following particulars relative to it may not be considered out of place:—The basket portion is composed of robust, closely-interwoven wickerwork, annually painted green, both for effect and for the preservation of the comparatively frail material of which it is composed. In form it is circular, and made to rest upon a substantial wooden frame or support, constructed with a view to strength as well as ornament. This ornamental stand is about 18 inches or 2 feet high, square in shape, with a circular top corresponding to the diameter of the basket bottom, and like the latter, is painted green to preserve the wood, as also to harmonise in colour with the superstructure which it upholds. The flower-basket itself is about 5 feet diameter at top, 2½ feet across at bottom, and about 3 feet in depth. The interior is necessarily furnished with a portable lining of sheet-iron next the wickerwork, perforated at bottom with numerous apertures for the escape of moisture descending through the soil, and since the basket itself is bottomless, the circular false bottom of perforated sheet-iron (though, of course, placed inside the basket), is necessarily made to rest chiefly upon the ornamental latticed frame which supports it. It is, of course, a portable contrivance *in toto*, being disposed in winter in some dry airy place for the

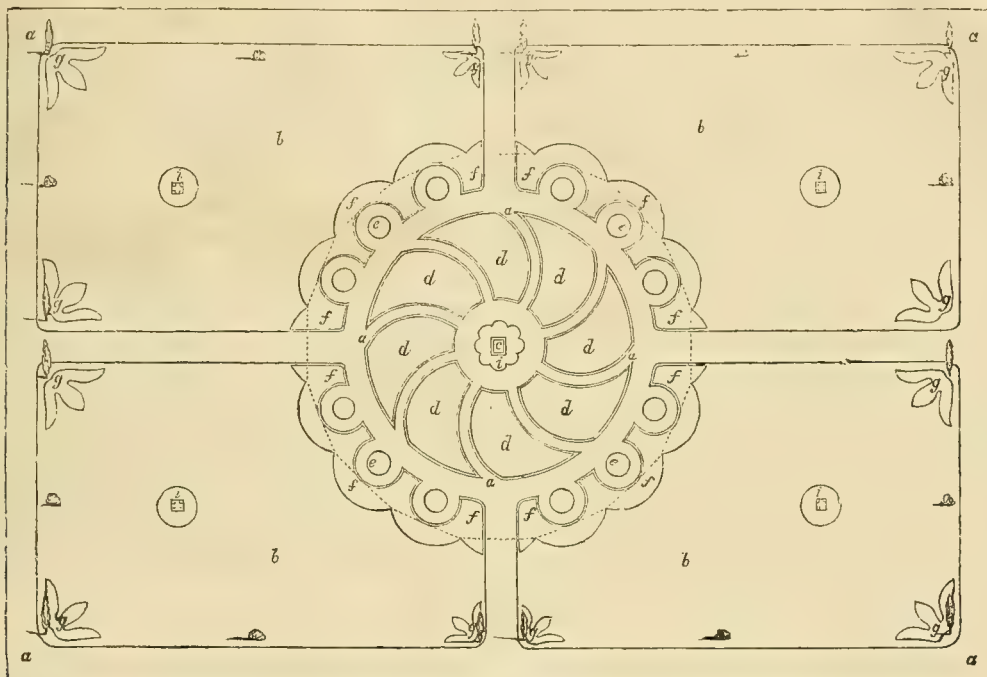
THE PELARGONIUM GARDEN.

FOR the preparation of the annexed plan I am indebted to my tasteful friend, M. H. Seitz, of Chatsworth. There is apparent in this garden a judicious blending of gravel and grass, pro-

sake of preservation from damp, and consequent decay, until again required for use as a summer ornament. Drainage and soil are, of course, renewed annually when re-introduced to the flower-garden; and albeit the species of ornament I have described is composed, in part at least, of frail materials; if painted over yearly and taken care of in the dead season it will last for many years.

At Oakley these flower-baskets are exclusively decorated with a miscellaneous assortment of choice hybrid and Fancy Pelargoniums, fringed with the trailing Ivy-leaved and variegated

kinds, which depend over the sides in rich profusion, producing a luxuriant and yet most elegantly unique appearance. Scarlet Pelargoniums are omitted from these baskets as being too conspicuous and glaring in colour, when thus elevated so nearly to a level with the eye of the observer: and the *coup d'œil* presented is more reposeing and softer in consequence of their omission. In planting them the plants are so thickly disposed as to confer upon these beautiful flower-stands, when in full bloom, an appearance of what in truth they are—magnificent tastefully-formed bouquets of Pelargoniums.



Plan of Pelargonium Garden at Oakley.

Reference.—The accompanying plan being uniform and pretty well balanced throughout, it will be indispensable, in order to obviate any violation of the effect as a whole, that the corresponding parts be arranged so similarly in respect of the habit, height, colour, &c., of the different varieties of Pelargoniums employed in its decoration, as to confer an expressive air of unity and harmony upon the entire disposition—the respective parts of the design being thus made to reflect, as it were, the corresponding ones. This is easy of accomplishment, provided the plan be carefully studied on paper previous to planting it; and which is assuredly well worth the pains, when it is known that any material mistake in the arrangement must inevitably prove destructive to the equipoise and harmony of the picture.

The fastigate tree and dwarf bush profiles indicated on the plan are intended to represent specimens of some strict-growing and spreading plants, as Irish Yew or evergreen Cypress for the former, and Phillyrea or Laurustinus for the latter. Doubtless, however, well-mansged examples of standard or pyramidal Pelargoniums would be equally as appropriate in these positions; and the small angular beds on grass, g, near which they are planted, might most appropriately be furnished alike with masses of the "Frogmore Improved" scarlet, zoned with some variegated Pelargoniums for effecting a suitable contrast with the grass.

The small square, c, within the circular figure, z, in the centre of the gravel parterre, a, and grass-plats, b, are consecutively the sites of the statue of Flora and flower-baskets shown in the plan. The circles, z, surrounding the basket-stands, being furnished with fragrant Pelargoniums, intermingled with Heliotropes and Mignonette; the base of Flora being planted with Pelargonium Lucia rosea, margined with the gold-leaf variegated variety: a, represents gravel walks, respectively, 8, 6, and 2½ feet in width; and b indicates the grass portion of the plan.

The dotted line extending round the circumferential border, f, shows the direction of the iron trellage arches exhibited in the plan, the border itself being filled with the most brilliant kinds of scarlet, margined on both sides with the variegated Pelargonium called "Mangles' Silver Bedding."

The small circles, e, are devoted to handsome full-grown specimens of pyramidal Pelargoniums, zoned with the old dwarf Frogmore Scarlet. The best and most select bedding varieties of the "choice" and "Fancy" hybrids, with a goodly intermixture of fragrant-leaved Pelargoniums, are apportioned to the beds, d, composing the large interior circle of the garden.—GEORGE TAYLOR, Chatsworth.—(*Garden Companion*.)

TYING MATERIAL WANTED.

HAVING on more than one occasion called the attention of the readers of THE JOURNAL OF HORTICULTURE to this subject, some apology is, perhaps, due for reverting to it again; but the class likely to answer the inquiry and furnish the article wanted, being distant travellers, are not likely to see our publication regularly, and may, consequently, have not noticed the "want"

pointed out. That a foreign article is needful will be generally admitted; for I fear our home-manufacturers with all their skill will not be able to supply us with anything cheap enough to meet the requirements of every day's business; and it certainly is no compliment to those who supply us with the article in general use, or rather to ourselves also, that we have not been

able to improve on the modes of our grandfathers. Garden mats were in their days used in the same way as now—i.e., cut up for tying purposes. Some years ago, however, another article was obtained in small quantities which for a time promised to supersede the Russian matting; but its quality seemed to deteriorate after the first batch, and it fell into disrepute—this was the Cuba bast; it was also more expensive than the usual garden mats.

Now, when we take a survey of the many substances that have found their way into this country in the last twenty years or so for the various purposes of dress, household economy, or of supplying our manufacturers, it is certainly no compliment to us that a better article than Russian matting has not been discovered for tying purposes. But assuming that the material of the mat answers its purpose tolerably well, which I do not deny, the question is, Why cannot that material be imported in a condition ready for its use, instead of being worked up into mats? What I want is bundles of the fibrous material merely tied up into something like a cable, and of any suitable length in which the material is most conveniently obtained—say from 6 to 10 feet long. By this means the trouble of weaving it into mats might be avoided, and we might thus hope to have the finest and best material selected for tying purposes; whereas at the present time we have to look over a number of mats to find one that seems likely to be a good one for the purpose.

This arrangement might easily be carried out by the merchants who import the mats giving instructions to their agents abroad to procure a few bundles of the fibre dressed a little, and selected as being good, tough, and strong. Thus to the consumer the article would be at once more handy and cheaper. I do not by this mean to assert that the inner bark of the Lime from which our mats are made is the best material in the world for the purpose we put it to, but in the absence of anything better, let us have it as good as can be had; and let our adventurous travellers in distant countries see if there is nothing amongst the vegetation of other places that will answer the purpose better. Assuredly some of the interminable creepers we are told connect the trees and shrubs of other countries together with a network of great strength and persistency might be made to do service in another place and in another way; or it might be some of the reeds or grasses, or the bark of some other tree than the Lime might be tried. Brazil furnishes materials for brooms, summer hats, floorcloths, and many other articles, and it might, no doubt, with a little further effort on the part of those who explore its natural riches, furnish an article to meet our wants also. I therefore make no apology for throwing out the hint, and whether we obtain improved bark matting from the North or a substitute for it from the Tropics, it will be equally welcome, and a boon conferred on the gardening community.—J. R.

IS AN EAST OR NORTH ASPECT BEST FOR A CONSERVATORY?

IN erecting a span-roofed conservatory adjoining a drawing-room, should it be on the north or east side of the house? Would the north side do for Camellias, Azaleas, Primulas, Cinerarias, and a few other such plants in winter, as no sun at all would reach it, and for Fuchsias, Pelargoniums, Balsams, &c., in the summer? Or would you prefer the east side for these things where they would have a little sun in winter?—J. E. H.

[We presume you have no other alternative, and in such case recommend decidedly the east side. You may bloom and keep the plants on the north side, but you will have much less success in growing them.]

WEIGHT OF FRUIT OF MUSA CAVENDISHII.

I HAVE read with interest the remarks by Mr. Robson respecting *Musa Cavendishii*. It may, perhaps, interest him to learn the weight of fruit that was cut from a plant here. The plant was brought here in a small pot by a lady, and planted the 14th of April, 1862, and the fruit was cut the last week in April, 1863, weighing 42 lbs. (14 ozs. to the pound). I may say before I cut the whole bunch my employer weighed the largest two cones, 7 ozs. each. The barren end was cut off six weeks before the fruit was ripe, and I am sorry I cannot give you the exact

number; I should suppose about 126.—M. BAYNES, *Well Head, Halifax, Yorkshire*.

[Why were only 14 ozs. allowed to the pound? Sixteen ounces being the usual allowance, a deduction of one-eighth is to be made from the above weight, which reduces it to 36 lbs. 12 ozs.]

ENTOMOLOGICAL SOCIETY'S MEETING.

A MEETING of this Society was held on May 4th; F. Smith, Esq., President, in the chair.

Mr. S. Stevens exhibited a number of insects from South Africa collected by Mr. Trimen; a collection from Madagascar sent home by Mr. Plant, containing a few Coleoptera and some fine Lepidoptera, conspicuous amongst which was a new *Dia-dema*; a collection from the Feejee Islands, principally of Coleoptera, and comprising many new species; some spiders from Bogota of enormous size; and a specimen from Australia, which was apparently undistinguishable from the British *Sinodendron cylindricum*.

Mr. M'Lachlan exhibited the case of a Caddice Worm (*Lim-nephilus*), which was entirely composed of small shells (of a *Planorbis*), from 250 to 300 in number, arranged with the utmost regularity so as to resemble a piece of mosaic.

Mr. Edwin Shepherd exhibited specimens of *Biston betularius*, which had been reared from eggs sent to him from Lancashire. Mr. Edelsten had last year found a pair of this species in copula, one being the normal form of the insect, and the other the black variety sometimes found in the north of England. The eggs sent to Mr. Shepherd were the fruit of that union; and from them twelve specimens of the perfect Moth had emerged, of which eight were of the ordinary colour, whilst four were of the negro variety. Of the twelve, ten were females; and of the two males one was a negro. The whole of the larvæ had been fed on the same food, principally on Lime leaves. It was remarkable that the black variety had never been captured in the south, and that no intermediate forms had ever been bred to connect and link together the light grey type and the sooty black variety.

Mr. Waterhouse exhibited *Oxypoda lentula* and *O. miscella*, both hitherto unrecorded as British species; also a British specimen of *Trechus*, which he considered to be identical with the insect sent to him by Dr. Schaum as *T. obtusus*; and specimens of *Philochthus Mannerheimii* taken at Darenth Wood.

Mr. Waring exhibited some dead pupæ of drones which he had found near the entrance of one of his bee-hives. They were not quite fully matured, and it would seem that the bees must have cut off the caps of the cells and cast out the dead pupæ; but he was unable to throw any light upon the cause of their death.

Mr. J. W. Wood made some remarks on the colouration and mimicry of nature visible on the under side of the wings of *Anthocharis cardamines* when at rest, and on the utility of this colouring on the preservation of the insect. The Butterfly might during the present month be found towards evening, or in cloudy weather, at rest in very exposed situations—on the tops of Grasses and flowers, and more particularly on those of *Anthriscus sylvestris*. The chequered white and green of the wings exactly resembled the small white flowers of the *Anthriscus* as seen against the green background of the hedgerow behind, and thus preserved the insect from observation. It was to be remarked, too, that, except as a secure resting-place, the Butterfly did not appear to be partial to the *Anthriscus*, but preferred to hover over and suck the juices of the wild *Geranium* and other plants.

A letter was read from Dr. Hagen, of Königsberg, the author of the recently published "*Bibliotheca Entomologica*," requesting British entomologists to communicate to this Society any errors or omissions which might be found in that work, and of additions to be made thereto, in order that by such assistance and co-operation the work might hereafter be made perfect and maintained complete.—(*Athenæum*.)

LANCASHIRE DISTRESSED WORKINGMEN BOTANISTS.—I have received from Lady D. Nevill £1 since I last wrote, on their account.—JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ATTEND to the thinning of the crops, and keep the soil loose where it is possible to do so. *Asparagus*, now is a good time to apply salt to the beds, and also to Sea-kale-beds. About 1 lb., to a square yard is sufficient. It is a great waste to lay it on after the plants have done growing, particularly when the soil is at all inclined to be cold and stiff. Stimulants applied now will enable the roots to lay up a good store of organised matter for another season, and, therefore, in addition to salt, occasional applications of manure should be given if possible. The effect of this kind of treatment will be perceived in the autumn by the plants retaining their green colour much longer than others not so treated, and in the spring by increased size and productiveness, evidently showing that the longer the functions of the plants can be preserved by the application of stimulants, the greater amount of matter is stored up for the ensuing season. *Broccoli*, the planting-out of these and the Winter Greens, Kales, Cabbages, Cauli-flowers, &c., must be vigorously prosecuted, and every vacant space should now be kept well filled-up. Liquid manure will be in continual request. *Celery*, the trenches for the main crops should now be prepared. For this purpose the spaces between the rows of Peas are very applicable; the shade from the Peas will be very useful to the Celery in its earliest stages, and they will be entirely removed by the time they are likely to be injurious. *Dwarf Kidney Beans*, another sowing may be put in for succession, and advancing crops both of these and Scarlet Runners well thinned out. Keep the soil about them well forked-up and pulverised. Experience goes far to prove that the fork is the best implement that can be used amongst all wide open crops. *Peas*, continue to top them, and also the Broad Beans as they advance, and keep them well gathered as they become fit for table. Make another sowing of Peas. The Early Frame is a good sort for this and the next sowing, after which time there will be but little chance of their coming to perfection. *Turnips*, keep them well thinned out and watered when needful. Make successional sowings. *Tomatoes*, see that they are kept well thinned out, and nailed to the fence or walls.

FLOWER GARDEN.

The most pressing work at present is that of keeping the place in order. A little pains taken with the walks at this season will be amply repaid by the air of comfort and pleasure which well-kept walks give to any place. Cuttings of *Roses* may now be taken and planted in a close cold frame in a northern aspect. In about a month they will be callused over, indicating a disposition to strike root, when they may be taken up carefully, potted, and plunged in a slight bottom heat. Treated thus they will make nice plants in a short time, and if kept under slight protection during winter will fill their pots with roots and be ready for planting out next May. Remove suckers from *Roses*, and clear the stems of wild shoots. Strong shoots of *Chrysanthemums* may now be layered in pots to produce dwarf, compact bushes. Those in pots may soon receive their final shift, and such struck-cuttings as have been planted out in the open ground to be frequently topped until the middle of July, to make bushy plants for taking up and potting in the autumn. Cuttings put in now will also make nice plants by the autumn. Those bulbs which are placed in the borders and which add so much to the beauty and lively appearance of the flower garden and shrubbery during the spring months, should now have some attention. Those that require it should be taken up. We would not recommend this to be done annually, but only when necessity requires it. An acquaintance with the different species will direct the cultivator in his operations in this respect. Some species, for instance *Crocuses*, *Tulips*, &c., form new bulbs beside the old ones, and in course of time become so crowded as to become weak and cease to flower; others form their new bulbs under the old ones, and at last get so deep as to produce the same effect. Others, again, form their new bulbs over the old ones, and send them above the surface of the ground, where they are destroyed by the hoe, the rake, or the frost. All those that require taking up should be lifted now and housed till autumn. Decayed patches of bulbs which are required to stand for early-spring flowering, may have *Verbenas* or other things introduced from pots between them, so as to give gaiety to the places they occupy. Cuttings of *Pansies* to be put in before the shoots are too much exhausted. All boundary or other hedges to be clipped forthwith.

FRUIT GARDEN.

The nailing of the young wood of wall trees to be continually followed up. Strawberries will now require timely applications of water according to the state of the weather, and the fruit to be protected from birds. Thin-out the young canes of *Raspberries*. Pinch-out the tops of the young shoots of *Figs*, and thin the fruit if too thick. As soon as the *Grapes* on the open walls are set they should be well thinned, it amply repays the extra trouble.

GREENHOUSE AND CONSERVATORY.

Remove to houses with a north aspect or under the shade of a north wall any plants whose period of blooming it may be desirable to prolong. Seedling Chinese *Primroses*, *Cinerarias*, and other plants required to furnish the winter supply of bloom should now be forwarded by shifting into small pots; keep them in a cold frame where a slight shade can be given them in hot weather; or, what is better, turn the frame to the north. By pinching-out the blossom-buds of the young *Pelargoniums* a late bloom may be secured. The *Perpetual* and *Bourbon* *Roses* which have been forced to be placed in a cool situation with the object of repressing further activity. After a season of rest the soil to be shaken from them, and all decayed roots removed, after which to be potted in fresh rich soil, and removed to the protection of a cold pit, and there plunged. Let shading be used with caution at all times whenever the weather is in any way dull. As plants will soon be ripening their young wood, they want as much light and even moderate sunshine as possible.

STOVE.

As light has now reached the maximum point, and solar heat nearly so, fires may be dispensed with here, except, perhaps, on the evenings of wet days, when a little fire will be necessary to allow of admitting air early in the morning. Propagate *Luculia gratissima* by cuttings. *Gesnera zebrina* may still be potted for late blooming. The *Achimenes* and *Begonias* for succession to be repotted progressively. *Gardenias* and other things that have been in the conservatory while in bloom to be replaced in heat as soon as their beauty is over, in order to allow time for their growth being ripened before short days and dull weather shall have arrived. Look well about the stands of *Stanhopeas* and *Oncidiums* now about blooming, that no snails are concealed.

WINDOW FLOWERS.

A few words on this subject may be useful. When the windows and balconies are filled with a selection of plants according to taste, and these are potted into moderately large pots sufficient to last them through the growing season, they will require little other attention besides watering, which must be very regularly and constantly done. Plants in this situation, from the position they occupy, are extremely liable to suffer from drought if there is the least neglect in administering their supply of water. This applies equally to all kinds of plants cultivated in these situations. In order to protect the plants from injury in consequence of the powerful rays of the sun striking directly on the side of the pots, often very thin, and forming a mere shell around the roots, it is advantageous to set the pots containing the plants within others just large enough to contain them; the double sides of the pots, together with the small open cavity all around between the two, prevent the evil to a very great extent, and it may be still further prevented by choosing the exterior pot still larger, and filling the cavity between the two with moss, which is to be kept damped. Where moss is easily procured a bed of it may be formed on the window-ledge, in which the pots could be plunged, the moss being kept damp. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

A GLORIOUS rain since our last, and continued warm, sunny showers, have given a fresh aspect to garden and field, and cheered the heart of the cultivator, bringing to his lips the words of out-spoken gratitude. Though planting was tempting, yet several times the men were sent to sheds, to stick-pointing, and pot-washing, as the sweet pearly drops of rain would do more good in the ground than upon their backs. When we look back to the times when it was common for men to nail with the trees covered with snow, and to mow with the water running down their limbs, and gurgling up over their shoes, we for one have no faith in the old adage, that "the former times are better than these." Few even of the disciplinarians would have the

heart to enforce such practices now, though even still it is no uncommon thing to hear of horses being brought in out of the wet, and men sent out in the rain to fare as they may. Think of poor ploughboys getting home to their stables soaked, putting on next day the clothes they had no chance of drying, and need we wonder that instead of being at their best, they become old men at thirty and thirty-five, and get crooked with pains and penalties ever afterwards? Most of us, however, would have been glad to put up with a drenching in the continued drought. We feel grateful for the attempts that are made to improve the condition of working men in their homes; but a nice cottage is but an unsuitable home, if deficient in the supply of good water. It would be well if there were something like a legal enactment as to wells or tanks, as relates to the proprietors of cottage property. We know of villages in which, if there should be a well, few have any right to use it, and for water for all sorts of purposes, cooking included, the residents must resort to pools and holes, where the water has flowed from the highway in floods, and most of which in elevated districts were completely dried-up in the late drought. It was sickening to see the poor women trying to fill a little pail, by skimming with a saucer a piece of water less than a yard square, and passing it through a cloth before it could be used for anything. Need we wonder at the prevalence of goitre, and thick necks, and numberless maladies produced by such unwholesome water? Were I a legislator, I should try to enact that the landlord, who looks sharply enough after cottage rents, should be constrained to provide by tank or well for his cottages, so that the inmates should have something else to depend upon for that essential necessary—good water, than the puddles and pools by the side of the highways, &c.

Planted-out some Brussels Sprouts, Savoy, and Scotch Kale, and must prick-out more for want of room to finally transplant. Planted also a good breadth of Cauliflower. Thinned all Onions, laying the thinnings in thickly by the heels for salads. Thinned also Parsnips and Carrots finally. Removed all the seed-heads from Sea-kale, except those wanted for seed, and thinned out the crowns. Threw a little lime and ashes over Beetroot and late Carrots. Made the last sowing of Peas and garden Beans, unless, perhaps, a row or two of early kinds of the former in the end of the month. Sowed more Lettuce. Thinned Turnips. Cut down all Parsley showing seed-stalks, except a few for seed, as this will cause the stools to produce longer, and give more time for the young Parsley. Notice that young Sea-kale and Asparagus is coming thick enough now. Ceased gathering old beds of Asparagus; in fact, as we have plenty of Peas in-doors and out of doors, have cared little about it of late. Prepared for planting Celery, the forwardest being large plants, and will hoe all ground as soon as the weather changes, to keep the moisture in the ground. Cauliflowers and other vegetables have grown amazingly since the rain. Put a little more covering on the Mushroom-bed in the shed, after the cooler weather with the rain, and made up a little bit more at the end of it for succession. Some weeks ago we mentioned tar being put on the side of a bed in the Mushroom-house. Though as much removed as possible, the smell is not yet quite gone, and as that and woodlice together threatened the young Mushrooms, we have set the tops of hand-lights firmly on the beds, and within the Mushrooms are coming nicely. As soon as the bed in the shed is bearing, we will clear out this bed, clean and smoke the house with sulphur and a little vitriol, which will pretty well destroy all woodlice that may be left. The worst of it is, that in all old gardens there is almost sure to be some taken in with the material for the beds, just as mice are taken in sheaves into barns and stacks rendered misproof. Regulated Cucumbers, planted fresh beds, and potted-off Capsicums, Chilies, &c.

FRUIT GARDEN.

Much the same as the last week, only the rain has saved us the trouble of driving honeydew and many insects from bushes, &c. Watered Figs heavily as the crop is heavy, and put a little fire on in the duller days with more air, as two or three fruit showed signs of damping at the points. Have gathered a considerable number. Some gentlemen told us that the prettiest sight we had were some Cherry trees in a cool orchard-house, covered with fruit from pot to top like a red wreath. These and others have certainly been very useful, and have given very little trouble. Some Bigarreaux and Downtons, though paler in colour, have also been fine in size and quality. We have in the same place a few young Apricot trees, but they do not please

us at all. A few Plums are just too heavily fruited. We think either on trellis or as standards, planted out or in pots, a house of such Plums as Jefferson's and Coe's Golden Drop, would in the late autumn be a great luxury. Regulated Vines, Melons, Peaches, &c., as last week.

ORNAMENTAL DEPARTMENT.

In wet days, potting was the chief employment, but the week has been so busy with planting-out in the flower garden, that we have no time to write about it. Beds were beat up and all deficiencies from frost and drought supplied. We may as well mention here, that we had to replace a lot of Bijou Geraniums, and it is well to know how the disappointment was occasioned. The plants had been drawn a little, and were higher than we wanted them, and, therefore, after planting the stems were bent so that they were left nearly horizontal instead of perpendicular. Now, of all these plants, though the bottoms were quite sound, the stems if not withered-up were blackened, and the skin parboiled as it were, from the double cause we presume of cold by night and extreme bright sun by day; whilst all the plants that were smaller and allowed to stand upright were quite right, and nothing at all the matter with them, though planted the same day in the same bed. Of course, the upright stems would neither be exposed to radiation of heat, nor evaporation of moisture like those bent horizontally. As bearing upon the same fact, we may mention that Verbenas planted out early, and which for a certain purpose were staked upright, suffered little or nothing; whilst those pegged down were blotched considerably, though they are coming all right.

We have now pretty well all the rough of our planting finished, and it would have been done before the end of last month but for the dry weather and the scarcity of water. Dahlias that were turned out in beds have lifted well, and though strong have scarcely felt the moving. For large tall kinds the holes are made, and the stakes secured before planting, so that a little fresh soil can be given to each plant, the plant secured to the stake, and a basin round it made and finished as we go, the ground about one row being nicely forked or moved before we proceed to a second. For dwarf Dahlias we use the rough twig stakes we adopt so generally for other purposes; but in planting them, as well as all other things, as Geraniums, Calceolarias, &c., needing support here—the one row is staked and tied, after planting, before the next is planted, and the ground kept stirred all the time. In all such staking after planting, it is a rule never to put the stick within 3 or 4 inches of the stem of the plant. Young beginners will stick it in close to the stem, and thus probably injure the best roots. Some young hands have had to be threatened not only to be tied to a stake, for that they would not mind for a joke, but to have the stake driven through their foot for security, and that they would find no joke. Such a mode of planting and tying, and stirring the ground, using boards for standing on instead of sinking ankle-deep in the ground, involves more labour and more time at the planting period, but it is found to be truly economical in the long run. A man may soon plant a bed or border if he merely slips the plant in with a trowel, careless how hard and trodden it may be in places; but we never found such wondrous quick planting very satisfactory in producing early results.

We may give more particulars as to planting and arrangements in a simpler way, in the meantime we will just mention a little matter which we have had a little trouble in carrying out. In planting beds or borders edged with grass or lawn, the planter is apt to stand on the very edge of the grass or, perhaps, part of his foot is on the grass and part on the soil, and in either case, if the work to be done requires much time, the verge outline is destroyed, and apt to be thrown into holes and hills, and no little labour is required to secure a regular plane outline. Now a long board laid on the verge of grass saves all this bother and unsightliness; but unless looked after the board is almost sure to be shirked or forgotten. No bed, however nicely planted, will look well if it has tattered irregular edgings.—E. F.

TRADE CATALOGUES RECEIVED.

B. S. Williams, Holloway.—*General Plant Catalogue, including Orchids, Ferns, New and Rare Plants.* 1863.

William Dillistone, Munro Nursery, Sible Hedingham, Essex.—*Catalogue of Choice New Plants of 1863.*

TO CORRESPONDENTS.

CLAYEY SOIL, TO RENDER POROUS (N. Markey).—Apply sea-sand and tart-mould as you propose, but before doing so pare and burn 9 inches in depth of the entire surface, and add the ashes to the sand and mould. This will at once improve the staple and destroy the slugs.

DOUBLE PYRETHRUMS (A Subscriber, Cirencester).—If the Pyrethrums are quite double they cannot be propagated from seed. The stamens and pistils are changed into petals.

TURNER'S GARDEN SCISSORS (A Constant Subscriber).—We cannot tell where these can be purchased, but we remember seeing them at a cutler's in London not long since.

SHIPPING AURICULAS (H. B.).—Do not shift your Auriculas now, for June is about the time when they take their summer rest; and if they were repotted now it is almost a certainty that not having circulation enough going on, they would damp-off and die. We speak from experience, having last year had to receive a collection just about this time. The result was that about one-half of them died! If we could have had them in May or waited until the end of July, we should have been able to have saved them all, as in May they would have been making growth and at the end of July would have been preparing for their autumn start. We, therefore, strongly advise you to leave your plants in 60's as they are. The trouble of watering is a very minor evil. With regard to fumigation, it is a practice we never indulge in with the Auricula. We never allow the aphid to get ahead, and that simply by using a camel's hair brush, or, what answers equally well, some pieces of bush tied together and made into the form of a brush. You may keep the green fly under without fumigation.

PANSY FLOWERS INJURED (L.).—Your Pansy blooms are devoured by some unseen enemy, which we suspect is either the small white slug or the woodlouse. If the former, the best plan is to go out at night and examine, armed with a lantern and your fingers. If the latter, place some pieces of Elder with the pith hollowed out, or two pieces of board kept about an eighth of an inch apart on the bed, and you will then trap them. We would advise you to try, if fond of the Pansy, to grow them in pots, as they are a very favourite food of many insects.

HARDY SEEDLING POTATO (Mada).—If you have a Potato the foliage of which you think sustains no injury from a frost which blackens the foliage of other varieties, it would be desirable to save its tubers for seed, and try rows of it side by side with other varieties. Such hardiness is a desideratum in early Potatoes.

ORANGE-TREE LEAVES FALLING (A Subscriber).—Your Oxbone Orange is suffering from one or more of the following causes:—Imperfect drainage; and a sour soil, caused by too much water, or from giving only a little at a time, but never enough to thoroughly moisten the ball of earth, or the brown scale may have closed the pores of the leaves and sucked out the sap. Any of the above will cause the Orange to throw off its leaves. You will determine for yourself which of the above causes are applicable to your case, and adopt a mode of treatment the opposite you have followed to effect a remedy. In your case we would turn the plant out of the pot, take away all the loose soil and as much soil from between the roots as it is possible to do without injuring them with a blunt-pointed stick, cutting on any decayed roots at the same time with a sharp knife. But if the roots are very much decayed, wash all the soil away from them: take away all the decayed parts, cutting well into the quick. Prepare a clean pot sufficiently large to prevent the roots from being cramped against the pot sides, but not larger than just to contain the roots comfortably. Place a large crock in the hole in the pot; and if that be small, make it larger with a hammer. Put for a twelve-inch pot 3 inches of smaller crocks at bottom of pot, or let the drainage occupy one-third of the depth of the pot, and on that place a little moss, or, what is better, half an inch of cow-dung more. Pot lightly, yet filling up all the crevices between the roots, and keep the neck of the plant well up, for the Orange, like the Camellia, soon becomes sticky when the roots are buried. Use three parts turfy loam and one-fourth leaf-mould, with a little rough sand intermixed. If the plant is infested with scale, paint with a brush all the shoots with a solution of Gishurst compound at a strength of 8 ozs. to the gallon of water. Should you have the convenience of a hotbed at a temperature of from 70° to 80°, your plant will be much benefited by being plunged there until it breaks out leaf, and none the worse if kept there until the wood is formed. The top heat may range from 65° to 85° for about six weeks, then it should be lowered so as to gradually harden-off the plant for the greenhouse—its proper place. If the plant be straggling or the shoots weak, cut them well back when the buds begin to swell, for the sap is then on the move and roots are beginning to form. Syringe gently twice a day—morning and evening—and keep the soil in the pot rather dry at first, grow more as growth progresses. If you have no hotbed, place the plant at the warmest end of the greenhouse, sprinkle it lightly morning and evening with tepid water, and although it will be longer before growth commences than by the former plan, yet it may possibly recover; and if it does, pray make a note of it and send it to this Journal, for no tree is so grossly maltreated and so little understood as the Orange. The after-treatment of the Orange is to pot in March, adding a little rotten manure to the compost mentioned before, and to keep the leaves and stems clean by frequent sponging with a weak solution of soft soap and water. Your Myrtle-leaved Orange is doing for itself what the cultivator ought to have done long since—judiciously thinned the branches in the centre of the tree, and so prevented their smothering each other. Well regulate the shoots by a copious thinning, and give the plant more light and air. Examine the roots and make all right there, and then we think you will have no difficulty in getting it to bloom and fruit profusely. You may have cropped your tree too heavily, and that would account for the tree being unfruitful this year, or you may have indulged it too much with liquid manure—one of the most fatal agents to weak-growing kinds of Oranges.

GRAPES SHAKING (G. Berry).—Most likely you have left too heavy a crop. Remove shaken berries and reduce some of the bunches. You might make a drain in front of the border at once if there is no one. It is ascertained that the roots are deep and that is the cause of shaking, as soon as the Grapes are cut raise the roots, replant at once, water with warm water, shade the house, keep the foliage green as long as possible, and the Vines will be all right next season.

AZALEAS AFTER FLOWERING (L. J. L.).—Azaleas, when they have finished flowering, will make their wood and set their buds best in a moderate hothouse a little shaded. Then they may afterwards have more air and be set out of doors.

PLANTS COUNTER-ORDERED (Five-years Subscriber).—You should have returned the plants; but now, we think, you have no remedy.

BUDDING VINES (H. M. H.).—Inarching is a much better plan than budding, and as it can be done at any time, it is more generally practised. If, however, you are anxious to try budding, an examination of the buds will enable you to judge when they are ready; and while the sap flows freely in both bud and stock it may be done. A certain amount of firmness in both the stock and the wood the bud is taken from will be necessary. The operation is the same as for fruit trees and Roses, tie-up with woollen or cotton yarn, the former preferable, and examine the bud in time to see that the ligature does not bind it too severely.

SEEDLING CALCEOLARIA (C. Daniel).—The flowers appear to belong to a fine strain of Calceolaria, both outline and marking being good; but, of course, flattened as they were, we could not tell if they have the requisite rotundity. The brightness of the colours was pressed out. As far as appearances go, under these circumstances Nos. 2 and 3 seem the best; but the day is gone by for treating herbaceous Calceolarias other than as annuals. The first thing is to get hold of a good strain as you seem to have done.

CAMELLIA AND AZALEA LEAVES (J. B. Croydon).—We like inquiries to be brief, but the facts to be definite. The briefness is all right; but we have nothing to guide us to a decision. The Camellia leaves seem to have been scorched by sun falling on them whilst moist, the roots being dry or improperly drained. The Azaleas retain signs of thrips, for which the best remedy is smoking and well syringing afterwards. The other part of a leaf may be a Miller's Burgundy Vine, or ever so many things. The holes may be made by caterpillars, insects, or sun stroke. Who can tell without some facts or information?

FLOWER-GARDEN PLAN (H. K. A. Manchester).—In the roominess of your garden there is much to admire. Your main group is formed of five figures—a centre triple-raised basket with a broad border round it, forming a circle altogether, we presume, of some 10 to 12 feet in diameter. Round that are two nearly half-moons and two circles. The widest part of the quarter-moons and of these outside circles is not more than half the width of the central circle. This fact, and in addition the raised baskets in the centre, will so rivet attention on the centre figure that the four outside figures will be drowned, or at least thrown into the shade. The first hint we would give would be the enlarging of these four outside figures, so as to balance in size the central one. The next would be to carry No. 1, at one end of the lawn, much farther along, so as to be a balance to No. 7 at the other end. Now as to the planting. We do not see how the planting of the centre No. 6, with its flat bed and three tiers of baskets, is to be improved, presuming that the Lobelia in the first basket is higher than the Perilla in the back row of the level bed. We think that to contrast with this Perilla such things as *Gnaphalium Larperina* or *Veitchiana* would have been better, and then the Lobelia might have edged the second basket of Calceolarias. By the way, Calceolarias are not the best for baskets—they are so greedy of the water-pail. In the four beds round there seems to be neither balancing of colours nor balancing of materials. One of the beds is scarlet *Geranium*, one Calceolaria—yellow, we presume—one scarlet *Verbena* edged with *Alyssum*, and the fourth purple. Now, as you have white *Cerastium* and variegated *Geraniums*, and Calceolarias and Perilla in the centre figure, it makes it something difficult to balance these four; but two scarlets and two purples would be better than at present, or for variety make each of these beds different—as scarlet, blue, yellow, purple, which would all come in with the centre bed of baskets. We think No. 1 must look well—Perilla, variegated *Geranium*, Calceolaria, and *Centaurea candidissima*; but if that is the planting leading from the centre, we think the following would improve it:—First outside, *Centaurea candidissima*; second row, scarlet *Geranium* with dark leaf, as *Village Maid* or *Excellence*; third row, yellow Calceolaria; centre, Perilla. Still we have no doubt your arrangement will do well, but perhaps we have a prejudice that yellow and white neither contrast nor harmonise well together. We think the large bed, No. 7, would be much improved with a broad edging of *Cerastium*, and if *Biscutaria* all the better—it would be a balance, though far off, of the *Centaurea* in No. 1; and the *Saponaria*, besides, does not make a good edging of a straight line, as it will creep among other things, and much pruning spoils the look of it. The rest we could not improve. Let us know how the *Amaranthus melancholicus* stands the season with you. We cannot say we like it so well as the Spinach.—R. F.

CAMPYLOPSIS REFLEGENS AND PATEITA BORBONICA (A Young Gardener).—They thrive in sandy loam and peat, and as they do not move fast enough, try and give them a little bottom heat and frequent dushings on the top with the syringe. A store of a moderate heat will suit them, and a mild horrid of the same heat.

APHELANDRA LEUCOPHYLLA (Idem).—The *Apheleandra* would be better of peat and sand pressed firm and a little loam added, which will give more consistence to the foliage. If not growing freely, a slight bottom heat would do it good. The flowering depends on free growth and a slight check to cause the flower-buds to form at the joints.

FAST-GROWING CREEPER FOR A RUSTIC BASKET (H. F. B.).—As the season is now late, *Cobaea scandens* will suit you best as a summer annual, or you might try *Mandragora Bardaniana*, the *Canary Tropaolium*, or a *Lophospermum*; the last named is not so robust as the others. But if a permanent creeper was wanted for a sheltered place, *Eccremocarpus scaber* will do; or still to be more permanent and to look well at all seasons, try some of the *Jasminums*, *Roses*,—or, perhaps, the best of all—Ivy, whose ever-beautiful green fully compensates for its lack of gay flowers. *Messrs. Lee's* white variegated *Geranium* is not yet brought out. If you write to them they will give you any information you need about it.

VINE LEAVES (An Amateur, Stratford).—The leaves were very much dried, but if it is not mildew we fear you have thrips. Examine closely, and see if you can discover any small jumping insects. If so, smoke as well as use the sulphur water; also use clear lime and soot water.

SOOT WATER (Idem).—Mr. Fish makes the latter by placing half a peck of soot or so in a barrel of water—say 50 gallons—and a quarter of a peck of fresh lime, working it up with a pail of water so as to mix, and then filling the barrel. In twenty-four hours the liquid will be as clear as brandy, and whilst syringing with it will hurt nothing, no insects of any kind like it. When the liquor from filling up gets too weak, add more soot and lime. Before using, remove any scum on the surface. This should not be used for fruit nearly ripe.

DOUBLE PANSY (J. Brown).—This seems to be the same as the Double Purple figured in "The Florist," where the colours are not well brought out.

NAMES OF FERNS (Henry, Haslewood).—The "Fern Manual," which will be published at our office on the 22nd, gives an interpretation of all the names. You can have it free by post for 6s. 2d. from our office.

YOUNG VINES NOT FLOURISHING (An Amateur, Nantwich).—All you have done and the soil appear quite correct, and the only suggestion we can make is that you have planted the Vines too deeply. The roots should have been spread out at about 6 inches from the soil's surface. If you have planted them deeper, take them up carefully as soon as the leaves begin to fade in the autumn and replant them. You must not use sulphur as you propose to kill the red spider. You had better dust the leaves with it, and keep the air more moist.

GRAPE BUNCHES DYING (D. B.).—If there have been no mice gnawing at the stems, the want of root-action is the cause of the Vine-blossom giving way. You should have the cause of two things, or both. The Vines being transplanted in November, the roots should have been encouraged to active progress by a heat of from 75° to 85° as soon or before the buds broke, and then only a moderate instead of a full crop should have been allowed to stand the first season. The more the roots are coaxed, and the less the branches are excited in such circumstances, the better. Most probably the Vines will be tempted by a night temperature not above 55° to 60°, and a slight shade in bright sunshine. No doubt the Trentham Vine in the orchard-house had either been deficient in root-power or you had kept the roots too dry, and therefore the stems gave. If not too late, examine the stems and roots below the ground are not nibbled. We have had several injured this season.

HERBACEOUS PLANTS—GRASSES, &c. (S. S. B.).—Your inquiry is too indefinite. We might fill some pages with names and not suit your purpose. Lists of herbaceous perennial plants have been given, and we are in a maze as to particularising. You had best select a few at first, as *Aquilegia* of kinds for spring and summer, average height 2½ feet; *Anemone* of kinds for early spring, and *Anemone japonica* for blooming in summer and autumn; *Delphiniums* of kinds, as *formosum*, *Hendersoni*, *Barlowi*, *grandiflora*, for summer and early autumn, from 2½ to 4½ feet; *Dielytra spectabilis*, for spring and early summer, 18 inches; *Gentiana acaulis*, for edgings in spring and summer, and the other kinds, from 1 to 1½ feet in height; *Helicopsis*, or *Christmas Rose*; *Lilium candidum* and others; *Gladiolus* in varieties, though it would be as well to raise the tubers; *Phlox*, a collection of hybrids; *Pansies* of kinds; *Lychnis* of kinds; *Potentillas*, yellow, scarlet, purple; *Saxifragas*, low-growing plants; *Silene* of kinds; *Spiraea* of kinds; *Veronics* of kinds. Then for grass-like plants we would recommend the *Pampas Grass*, the *Feathered Grass*, *Stipa pinnata*, and some six or ten more which your seedman considers most ornamental. Then for the foliage-plants we would instance *Purple Spinach*; the large *Atriplex hortensis*, purple; *Amaranthus melancholicus*, crimson purple; *Perilla nankensis*, dark purple; *Cineraria maritima*, silvery white; *Arctotis grandiflora*, white; *Alyssum variegatum*; *Centaurea candidissima*, requiring a warm greenhouse in winter; *Gnaphalium lanatum*, white, woolly, strong-growing, but needing protection from frost in winter; *Stachys lanata*, still more woolly and white, but coarser, though quite hardy; *Cerastium tomentosum*, small low plant, fine for edgings and beds. One year ago some edgings were placed round the sides of beds, raised by stakes and I try a foot or 15 inches above the ground, and from the end of March and onward to the end of June all round the bed, from the front upwards, has been a dense growth of white flowers, and when the time comes for the cutting there will be the white foliage. *Cerastium Biebersteinii* is a little stronger-growing, but otherwise seems to be no improvement. We might answer you better if we had more facts and details.

NAMES OF PLANTS (C.).—Apparently *Myosotis sylvatica*, but the specimen was much injured. (*B. A. S.*)—*Asperula arvensis*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BATH AND WEST OF ENGLAND POULTRY EXHIBITION.

THAT the Poultry Exhibition connected with the Bath and West of England Agricultural Society of the present year is the best ever yet obtained under its auspices, cannot be open to difference of opinion, for not only were a greater number of pens entered than on any previous occasion, but we are much gratified to say, scarcely an indifferent pen could be pointed out after the most rigid inspection. The satisfaction of poultry amateurs will be increased on being assured that, without a single exception, every head of poultry was safely delivered at the show-yard, at Mount Radford, without the slightest mishap or injury to a single specimen, although lying about a mile from the Exeter Railway Stations. This naturally augurs well for the future success of this Society; and so far as scrupulous care and attention to the wants of the birds is concerned, no committee of management could be more worthy of public support. The Bath and West of England Agricultural Society has during a long course of years enjoyed a high position in public favour, having been first instituted so far back as the year 1777; consequently it is one of the oldest, if not the very oldest, of the agricultural societies extant. This year the Poultry Exhibition took place beneath two very large and commodious tents, which afforded by their peculiar arrangement a much better and more generally diffused light than we customarily meet with under like circumstances. To this necessary feature we attribute in

no small degree the evident ease and comfort displayed by the birds throughout the whole Exhibition.

As seems an almost general rule at such meetings, the *Spanish* class stood at the head of the list. It was very gratifying to find that nearly the whole of the birds in this class were of high merit, and their condition as a body was more favourable than we anticipated. The third prize by care and attention to condition might be shown to great advantage; they were evidently one of the best pens, but were over-shown, and were in the worst exhibition trim of any competing. The hens in the second-prize pen were first-rate, as were equally those in Pen 2, highly commended, but a falling comb in the cock was a fatal objection. Several other cocks had this failing.

The *Grey Dorkings* were a better class than ever exhibited at this Society's meetings on previous occasions, but, as might be expected, the adult birds are now fast falling into indifferent feather. Lady Holmesdale with an entry of three pens swept the board of all the three prizes, and obtained the silver cup also, for the best shown in classes 1 and 2. In the class for *Dorking chickens*, Mr. Wakefield showed a fine even pen, and took first; the second falling to Mr. Smith, of Salisbury, closely pressed by several exhibitors. The *Grey Dorking* chickens shown were the earliest and best plumed we have seen this year; and it was equally worthy of mention that none were shown with deformed feet and toes, a failing to which very early hatched *Grey Dorkings*, or, in fact, any weighty description of poultry, are very susceptible. This arises in chief from chickens hatched in the early spring months huddling together for warmth, without taking sufficient exercise; consequently their legs and feet fail them. The *White Dorkings* were as good a class as have been seen for years past—so good, indeed, that every pen entered was favourably noticed by the Judges.

Captain Heaton won first place with his well-known Partridge-coloured pen, pressed, however, more closely than usual by a most excellent pen of purely Lemon-coloured *Cochins*, so good, that we anticipate the £21 award would not prove a prohibitory price. They were shown by Mrs. Fookes. The *White Cochins* were perfect, Mr. Chase taking both the adult and chicken prizes.

In *Game* fowls every class was well filled with birds of the highest repute as prizetakers. Mr. Fletcher took a great proportion of the prizes. It was evident this gentleman had called heavily on his reserve forces for the Exeter Show, for every one of his pens was shown quite fresh, and, consequently, in faultless condition. The advantage of this practice contrasted with exhibiting birds week after week in succession never met with a more apt illustration.

As a whole, the *Game* classes were, without exception, well contested.

The *Malays* were the most out of condition that can be conceived, so ragged in plumage as to call forth much jocularity from visitors. We heard a young lady still in her teens exclaim, "Look at those fowls, the cock must have half plucked them, and then reprieved them till another time." Although the breed of many of the pens was unquestionable, it certainly would not have been any very great strain of justice had the class been disqualified altogether, as in not a few specimens, patches purely void of feathers of half the size of the hand were visible, calculated rather to shock than please the public. There is no just reason why *Malays* should not be exhibited in equally perfect plumage as other fowls.

The *Hamburghs* were really good in each of the four varieties. In the *Silver-spangled*, a "hen-feathered" cock was shown—a whimsicality we thought exploded long ago—his hens being without objection. The pen was necessarily disqualified.

The *Black Polands* were, as is always the case where Mr. Fenton Edwards exhibits, a very superior collection. We would suggest to the Council of the Bath and West of England Society, that in future the *Poland* class should be open to every variety, as by so doing the entries would be numerically fourfold, whilst the outlay to the Society would be unaltered, compared to, as now, its being restricted to *Black Polands* only.

The *Spanish chickens* that were shown foretell that future years will prove that this aristocratic variety is still not without the most careful culture.

Many of the *Bantams* were extraordinarily good—so much so, that the Judges felt bound to suggest an extra prize to the consideration of the Directors, which will, we believe, be conceded. Black ones secured the silver cup for the best pen of any breed of *Bantams* shown. They were excellent; but it was rumoured

among amateurs the address of the owner was assumed—a report scarcely credible, so long as even the number of the house is added to the general address in the printed catalogue.

The *Geese*, *Turkeys*, and *Ducks* were most praiseworthy. A pen of Grey Calls in the fancy variety of Ducks, was evidently quite the pet of the company, they were the best pen ever shown by Mr. Harvey Dutton Bayly. It was the subject of general remark, that though the same sum of money was offered as prizes for Buenos Ayrean Ducks as to any other breed, no entry whatever ensued. This is the more remarkable, as the southern counties have always excelled in their production, and the Bath and West of England Shows have usually called into competition some of the best of them. It should be remembered they are very ornamental, excellent in flavour, and easily reared, whilst as layers few breeds exceed them. They are, it is admitted, somewhat prone to stray from home, particularly when the temptation of some still-flowing river is within moderate flight; but this propensity is much modified by the manner of rearing them, and can be prevented altogether if they are pinioned; nor does this latter arrangement seem to interfere at all with their comforts or productiveness if carried into operation whilst ducklings. Among the Rouens shown were many exceedingly large and well-marked birds, but dark bills are quite inadmissible, however perfect otherwise. In a pen of this kind the owner exhibited two drakes and two Ducks, which naturally led to disqualification. Rules must be enforced.

Among the curiosities that was not unfrequently find an entrance into the Any variety class, was a pen of four hybrids, the product between the common English wild Pheasant and the domestic fowl. They apparently elicited more attention from visitors than any other single pen in the whole collection, and certainly they were unusually interesting. To most of our readers it is well known such hybrids are invariably mules, being alike sterile, or *inter se*. It may, therefore, with justice be said, that their only useful position is the exhibition pen. As a rule, the birds that are thus produced by an intermixture of the fowl and Pheasant vary from each other extraordinarily in plumage; but in the case now named, the fowls in the best-selected pen in the whole Exhibition could not have matched more perfectly. They were *fac-similes* of each other, and certainly this trait of character added most materially to the interest of the pen—so much so, that it was constantly surrounded by inquiring visitors. Although the lustrous copper colour of their general plumage renders these hybrids so pleasing to the eye, those hitherto who kept such specimens have generally at length been obliged to do away with them as intolerable, on account of their inveterate egg-eating propensities.

This extra class brought into competition some excellent Crève Coeurs, Brahmas, Black Hamburgs, and White Spanish fowls. The neighbourhood of Exeter has for many years been celebrated for excellent specimens of this last-named singular variety. They are reputedly excellent layers, but we should imagine not equal to the Black Spanish, nor do we deem them as being of equally hardy constitution.

There was a very creditable display of *Game Bantams*, though just at this period of the year it is not by any means the best time for exhibiting them. The Seabrights were especially good, the Silver-laced having quite the advantage as to perfection of lacing.

Some very beautiful little birds, that to casual visitors "seemed to have no legs at all," were exhibited as *Japanese Mufflers*. We should fancy them the best calculated of any fowls we have yet seen for the rearing of Californian Quails, or any of the many varieties of Partridges.

There is always a very warm competition at the Bath and West of England Society's Show as to *Pigeons*, and this year's Show proved no deviation. It is very rarely that Pigeon-breeders have so great a treat afforded them as the Show just closed at Exeter. When it is taken into consideration that most fancy Pigeons are now breeding, the merit of obtaining such a collection is obvious, whilst it proves this year's liberal prize schedule was generally appreciated. We noticed particularly a class of Bunts comprising nearly every known variety of colour; Black Mottles, Blues, Silver Duns, being here all shown in the highest perfection. The perfection of plumage of some of the pens of Archangels must not pass unnoticed. The classes for both Almonds and for Short-faced Tumblers were well filled. Among the Barbs were some of the best-headed birds we ever yet met with, the class generally being both numerous and good. The

Carriers were a grand collection, and the Powers were a class good throughout. We were especially pleased with the Turbits, as of late this beautiful variety of Pigeon has been very scantily exhibited. The competition in the class for Fantails was great, and the Any variety class was replete with numerous and exceedingly good specimens.

A remarkable feature of this Show was, that not a single case of disease was observable throughout the whole collection; and if care and attention can insure its continuance, we are satisfied owners will be gratified on the return of their poultry.

SPANISH.—First, Viscountess Holmesdale, Linton Park, Staplehurst. Second, H. B. Kite, Exeter. Third, Brown, Sheffield. Highly Commended, R. Wright, Highgate; Rev. G. F. Hodson, North Petheriton, Bridgwater.

DORING (Coloured).—First and Silver Cup (as extra prize for the best pen of Black Spanish, or Grey Doring exhibited, Second, and Third, Viscountess Holmesdale, Linton Park. Highly Commended, Miss Milward, Bristol. Commended, W. Watson, Calstock, Cornwall; W. Vickers, Exeter; J. K. Fowler, Aylesbury; Major Altham, Taunton.

DOCKING (White).—First, Mrs. H. Fookes, Whitechurch, Blandford. Second, Mrs. Beadmore, Farnham, Hants. Third, Rev. G. F. Hodson, Bridgwater. Commended, Mrs. Beadmore; Rev. G. F. Hodson.

COCHIN-CHINA (Coloured).—First, Captain Beaton, Manchester. Second, Mrs. H. Fookes, Whitechurch, Blandford. Third, B. T. Ford, Exeter. Highly Commended, W. Vickers, Exeter.

COCHIN-CHINA (White).—First and Third, R. Chase, Balsall Heath, Birmingham. Second, F. W. Zurichst, Dublin.

GAME (White and Pile, &c.).—First, J. Fletcher, Stoneclough, Manchester. Second, H. Adams, Beverley. Third, W. Dawson, Birmingham. Highly Commended, Rev. G. S. Cruwys, Tiverton. Commended, M. Billing, jun., Birmingham.

JUN (Black-breasted and other Reds).—First and Silver Cup (as an extra prize for the best pen of Gamefowls exhibited, and Third, J. Fletcher, Stoneclough, Manchester. Second, H. Adams, Beverley. Highly Commended, W. Watson, Calstock, Cornwall; W. Boyes, Beverley; Rev. G. S. Cruwys; Rev. F. Watson, Woodbridge, Suffolk; S. Matthew, Stowmarket, Suffolk; M. Billing, jun., Birmingham. Commended, W. Watson; W. T. Everard, Abby-de-la-Zouch; W. D. Braginton, Akeford, Devon; H. Adney, Lympstone, Exeter.

GAME (Duckwings and other Greys and Blues).—First, F. Fletcher, Stoneclough, Manchester. Second, H. Adams, Beverley. Third, Rev. G. S. Cruwys, Tiverton.

MALAY (Coloured or White).—First, W. Sykes, jun., Mile End, London. Second, J. J. Fox, Devizes, Wilts. Third, W. Mansfield, jun., Portesham, Dorchester.

HAMBURG (Golden and Pencilled).—First, J. E. Powers, Biggleswade. Second, H. Beidon, Bradford, Yorkshire. Highly Commended, N. Barter, Plymouth.

HAMBURG (Silver-pencilled).—First, Viscountess Holmesdale, Linton Park, Staplehurst. Second, H. Beidon, Bradford, Yorkshire. Highly Commended, T. W. Walsh, Worcester.

HAMBURG (Gold or Silver-spangled).—First, I. Davies, Harborne, Birmingham (Golden). Second, T. Davies, Newport (Silver). Commended, H. Beidon, Bradford.

POULTS (Black, with White Crests).—First and Second, T. P. Edwards, Lyndhurst, Hants.

ANY OTHER VARIETY.—First, Miss S. H. Northcote, Upton Pyne, Exeter (F. White Spanish). Second, F. E. Collier, Salisbury, Wiltshire. Third, E. Pigeon, Lympstone, Exeter (Crève Coeur). Highly Commended, C. Langley, Chudleigh, Devon (hybrid between red Game cock and hen Pheasant); E. Pigeon (Brahmas); H. Beidon, Bradford, Yorkshire (Gold Pouter). Commended, J. Pates, Chertsey, Surrey (Brahma Foot); J. W. Fowler, Aylesbury (Brahma Foot); S. Dupe.

SPANISH CHICKENS (Black or White).—First and Second, J. R. Rodbard, Winton, Somerset. Commended, J. K. Fowler, Aylesbury.

DORING CHICKENS (Any variety).—First, C. H. Wakefield, Malvern Wells. Second, C. Smith, Durnford, Salisbury. Commended, W. Watson, Calstock, Cornwall; Miss Wilcox, Bristol.

GAME CHICKENS (Any variety).—First, H. Adney, Lympstone, Exeter. Second, J. Fletcher, Stoneclough, Manchester. Highly Commended, H. Adney; W. Rogers, Woodbridge, Suffolk.

COCHIN-CHINA CHICKENS (Any variety).—First, R. Chase, Birmingham. Second, J. K. Fowler, Aylesbury. Highly Commended, W. Vickers, St. Sidwell's, Exeter.

SWEETSTAKES.

GAME.—First and Silver Cup (as an extra prize for the best Game cock, Spanish, Dorking, Cochon-China, or any Game cock), J. Fletcher, Stoneclough, Manchester. Second, H. Adams, Beverley, Yorkshire. Third, W. Boyes, Beverley, Yorkshire. Highly Commended, J. Fletcher; H. Adams; S. Matthew, Stowmarket, Suffolk; M. Billing, jun., Birmingham. Commended, Rev. G. S. Cruwys, Tiverton.

DORING.—Prize, Viscountess Holmesdale, Linton Park, Staplehurst.

SPANISH.—Prize, Rev. G. F. Hodson, Bridgwater. Highly Commended, S. C. B. Pitman, Taunton.

GAME BANTAM.—First, T. H. D. Bayly, Biggleswade. Second, W. Sykes, jun., Mile End, London. Third, J. Camm, Farnfield, Wilts.

BANTAMS (Gold-laced).—First, T. H. D. Bayly, Biggleswade. Second, Rev. G. S. Cruwys, Tiverton.

BANTAMS (Silver-laced).—First, R. Chase, Birmingham. Second, T. H. D. Bayly, Biggleswade.

BANTAMS (White and Black).—Extra Prize, Mrs. H. Fookes, Whitechurch. First and Silver Cup (as an extra prize for the best pen of Bantams of any variety exhibited. It was awarded to Black ones), Miss K. Charlton, Bradford, Yorkshire. Second, Rev. G. S. Cruwys, Tiverton. Highly Commended, Rev. G. S. Cruwys. Commended, K. Brotherton, jun., Almondsbury, Bristol.

BANTAMS (Game).—First, T. H. D. Bayly, Biggleswade. Second, J. Camm, Southwell, Notts. Highly Commended, J. Camm; W. A. Deane, Bideford, Devon. Commended, W. A. Deane; E. Pigeon, Lympstone, Exeter; K. Brotherton, jun., Almondsbury, Bristol.

Ducks (White Aylesbury).—First and Silver Cup for the best pen of Ducks exhibited, J. K. Fowler, Aylesbury. Second, F. W. Fowler. Commended, G. Hanks, Malmesbury.

Ducks (Rouen).—First, J. R. Rodbard, Wroughton, Somerset. Second, G. Hanks, Malmesbury.

Ducks (Any other variety).—First, T. H. D. Bayly, Eiggleswade.

Geese.—First, J. W. Fowler, Aylesbury (Toulouse). Second, W. Manfield, jun., Portesham and Dorchester (Improved Dorset).

Turkeys.—First, Miss Milward, Bristol. Second, W. Manfield, jun., Portesham and Dorchester (Bronze). Highly Commended, Mrs. N. Grenville, Glastonbury (White).

Guinea Fowls.—First, Miss S. H. Northcote, Upton Pyne, Exeter. Second, H. Adney, Lympstone, Exeter. Commended, S. C. E. Pitman, Taunton.

PIGEONS.

CARRIERS.—First and Second, F. G. Stevens, Axminster.

ALMOND TUMBLERS.—First, F. G. Stevens, Axminster. Second, F. Else, Bayswater, London.

TUMBLERS.—First, F. Else, Bayswater. Second, F. G. Stevens, Axminster.

POWERS.—First, F. G. Stevens, Axminster. Second, R. Fulton, Deptford.

RUNTS.—First, F. G. Stevens, Axminster. Second, T. D. Green, Saffron Walden.

JACOBIANS.—First and Second, F. G. Stevens, Axminster.

FANTAILS.—First, F. Wey, Beverley, Yorkshire. Second, F. G. Stevens, Axminster.

OWLS.—First, E. Joblin, Newcastle-on-Tyne. Second, F. Else, Bayswater.

TRUMPETERS.—First, F. Key, Beverley, Yorkshire. Second, F. G. Stevens, Axminster.

BARBS.—First and Second, F. G. Stevens, Axminster.

TURBITS.—First, F. G. Stevens, Axminster. Second, E. M. Pierce, Taunton.

NUNS.—First, Rev. A. G. Brooke, Salop. Second, F. G. Stevens, Axminster.

DRAGONS.—First and Second, H. Yardley, Birmingham.

ARCHANGELS.—First, E. M. Pierce, Taunton. Second, H. Yardley, Birmingham.

ANY OTHER VARIETY.—First, F. G. Stevens, Axminster (new variety). Second, E. Pigeon, Lympstone, Exeter (Pouting Horsemen).

The Judges of *Poultry* were Charles Ballance, Esq., of Mount Terrace, Taunton; and Edward Hewitt, Esq., of Sparkbrook, near Birmingham. The *Pigeon* prizes were awarded by Dr. Cottle, of Cheltenham.

"B. & W.'s" APIARY.

(Continued from page 335.)

"As to the utility of drone-breeding queens in spring," against which your correspondent "INVESTIGATOR" decides, I am much inclined to agree with him from my own actual experience this year, although I may yet have something to say in favour of them before autumn comes. I have largely tried those drone-breeders, and while fully agreeing with "A DEVONSHIRE BEE-KEEPER," that the drones to which they give birth are capable of impregnating queens, I have found them practically useless. It is a very rare thing indeed to see drones in an apiary before the middle of April, nor are they usually seen in any numbers till the second week in May. But I presume that the existence of a very small number of vigorous drones would authorise one to expect that the wants of a virgin queen would not pass unheeded: therefore, if I had had no drone-breeding queens in my apiary, everything would have happened much as it actually has done with me.

But let me go to facts; and here I will beg your readers to turn to page 335. My absence from home prevented me from observing anything in my apiary during the month ending the 16th of May. That day I found everything going on apparently well with all my hives. A, D, E, H, and I, were very populous and active, and pollen was being carried into B and F. These two hives, therefore, had again supplied themselves artificially with queens. The queen of F would be hatched about the 18th of April, and the queen of B about the 24th. The question was, Would they be impregnated by the Italian drones, of which there were then, and still are, about two dozen in F, while, so far as I can tell, there were no other drones in the apiary? The only answer I can give is, that on examining F on the 27th of May, I found again a quantity of drone-brood, and plenty of full-sized drones, pure Italians, but no sign of worker-brood—a drone-breeding queen again. B I examined on the 2nd of June and found all well, with plenty of worker-brood sealed up, but I know not yet whether young bees show any marks of an Italian origin, and, indeed, but few of them can yet be hatched. It is this hive which I have in mind, when I say above, that "I may yet have something to say in favour of" drone-breeders in spring.

* I did not perceive drones in any save the drone-breeding hives till the 30th of May.

Before I conclude this paper I may as well copy from my note-book the remainder of my bee-practice hitherto. Resolving to try once more my luck with the Italians, I drove the whole adult population of A into a hive half full of empty comb, depriving them, however, of their queen (my pure Italian), which I returned to her now-deserted home, which was set in the vacant place, C. I had previously taken out of it a good piece of comb containing eggs and worker-brood of all ages. This was adjusted in a box and placed over the driven bees of A, which immediately set to work to repair their queen's loss. C, which was full of brood, is now pretty strong again, breeding fast, and comb-making. The bees of A did so well that I heard as many as three or four young queens piping in harmony on the 30th of May, and on Monday, June 1st, they swarmed naturally, two young queens going off with the swarm, one of which was, of course, sacrificed. This swarm is now G. I also succeeded in capturing one other of these, all of them being beautifully-marked young Italian queens, which I successfully gave to F, after a grand hunt for, and removal of, their drone-breeding mother. Thus A, F, and G are supplied with well-marked Italians, all of the same age. I also picked up no less than five dead queens under A, which were sacrificed before I could save them.

Out of D and H (see page 335) I made another swarm on the 27th of May, on Langstroth's plan, by driving D with its queen and adult population into a box full of empty comb. Then putting D with its brood in place of straw hive H, which was shifted to another stand in my garden. Everything is now (June 6th) going on as satisfactorily as I could wish, my bees standing in the following order:—

A. Pure young Italian queen. Born June 1st, 1863.	B. Young English queen. Born about April 24th, 1863.	C. Pure Italian queen. Born, 1862. (Late A.)
D. Hybrid Italian queen. Born, 1861.	E. English queen. Born, 1861.	F. Pure Italian queen. (Sister to A's queen.) Weak in bees.
G. Pure Italian queen. (Sister to A's queen.) Swarmed June 1st.	H. Box-hive in garden, now raising a queen out of D's brood.	J. Strong English queen. (Straw hive.) Born, 1861.
K. Same as J. (Late H.) Born, 1861.		

—B. & W.

TAKING A SIDE-COMB.

Surrey Highlander will be glad to know whether one side-bar may be safely taken from a well-stocked frame-hive a few days after a swarm issues from the hive. The side-bar was furnished with a sheet of embossed wax, and placed in the hive early in October last, when the bees immediately built upon it. Is it too early in the season now to ascertain whether they have filled the comb with honey?

[The comb could be better spared and would be more speedily replaced by the bees if taken previous to instead of after the issue of a swarm; added to which, if any comb be made after the departure of the old queen, and before her successor is impregnated, it will certainly be drone-comb. The proposed examination might have been made as early as April without injury if the middle of a fine day had been selected.]

DZIERZON ON FEEDING BEES—THEIR CHANGING SYRUP INTO HONEY.

IN the following masterly article on bee-feeding, its distinguished author appears really to have exhausted the subject. It will be perceived also, that he fully confirms the opinions with regard to the change effected by bees in artificial food, which have been so frequently enunciated in the pages of *THE JOURNAL OF HORTICULTURE* by—A DEVONSHIRE BEE-KEEPER.

ON FEEDING BEES.

Feeding bees can only be considered a necessary evil, with which the true bee-keeper who always keeps strong stocks has very little to do. He, however, who keeps bees in a locality not particularly favourable to the pursuit will, if he aim at increasing the number of his stocks, often be obliged to have recourse to feeding. Now, as last year, notwithstanding its promising appearance at the commencement, turned out unusually

bad for bees, owing to cold and wet setting in just at the critical period; it has been necessary to feed both in the autumn and in spring; and it may not, therefore, be amiss at this time to say something on the subject.

It is well known that food may be given to bees with a two-fold object: either to keep them alive until such time as nature again provides food and they are able to help themselves, or to stir them up to greater activity and promote breeding, which is frequently done in spring, until about swarming time. The former we call feeding of necessity; and the latter speculative feeding; and the question is how, when, and wherewith we must feed in order to attain both these ends in the surest, simplest, and cheapest way.

Feeding of Necessity must commence in autumn if the stocks have not such provisions that they may reasonably be expected to survive even a long and severe winter. Properly speaking, such feeding is disadvantageous to, and rather to be avoided by, a bee-keeper who has already a numerous apiary, and does not, therefore, stick at a few stocks. Such light colonies generally consume more than they are worth in spring, so that even in the most fortunate case no profit can be derived from them; but if they perish in an unfavourable season, food and trouble are alike lost, and even the combs are no longer useful—at least they are not of so much value as they would have been if the bees had been expelled by driving and added to other stocks.

It is easily understood why a beginner who wishes to multiply his hives tries to winter light stocks; and if they have only a warm dwelling, a good queen, and sufficient bees, they well deserve it, since if the next year be favourable they will repay tenfold the food bestowed upon them.

The best and most natural mode of provisioning light stocks is by inserting sealed combs immediately beside or directly above the seat of the bees, so that they may be able even in the coldest weather to reach the store without meeting with any empty combs, which at such a time they would not traverse. This operation may also be performed late, even in mild days in December, if one knows how to do it cautiously without disturbing the bees. Either place one or more combs just above the nest of the bees (the position is quite immaterial), by removing a part of the hive-cover, and filling any empty space with dry moss before replacing it, or take empty combs from the side until either the honey-store or the bees' nest is reached, and insert one or two sealed combs in their place. Possibly everything may be set right, and the hives closed before the cluster of bees begins to disperse. If the honeycombs at our disposal are not sufficient for all the stocks, the weakest may at least be furnished with them, and pieces of sugarcandy be laid on the bars of the stronger ones. When feeding with sugarcandy it must be remembered that it is only available for the bees if the apiarian or their hive provides them with the moisture required to dissolve it. Bees winter best on this kind of food when it is placed immediately under the well-cemented and somewhat cool top of the hive, so that the condensed moisture may not be absorbed by the wood. The twin-stock in particular, with its low honey-room, is arranged conveniently for it. In standard stocks it is well to remove the combs and the seat of the bees in the autumn from the middle to the upper compartment. If then a space of 1 to 2 inches high remains between the combs and the crown-board a good quantity of sugarcandy may be placed there, and when this is consumed a new store may be given. The opening at the top must be shut as close as possible, lest a current of air should abstract both warmth and moisture. Moss, which is a particularly warm substance, is especially adapted for filling every cavity. It need not be quite dry, and when feeding with sugarcandy it may sometimes be purposely wetted in order that it may produce moisture in the hives, or that the bees may be able to suck directly from it as from a sponge, or we may pour water into an empty comb and place this beside the sugarcandy. If many unfortunate attempts and experiments have been made in feeding with sugarcandy, the cause has been that this food has been given to stocks which were too weak to produce the requisite warmth, or perhaps it was not put in the right position and in the right place, or more probably that the bees were allowed to die from thirst. Although a superfluity of moisture within the hive is not desirable, since mouldiness and decay arise from it, yet its absence is certain destruction when the bees have nothing but dry sugar or crystallised honey. It is easier for them to dispose of a superfluity of moisture even in cold weather, than to search for water,

to suck it up and bring it home. Bees in want of moisture fly out even at a low temperature, and as they search for it also within the hive, many die both inside and outside their dwelling, whilst in consequence of the frequent disturbance, the whole stock is early seized by dysentery and perishes.

It is much more difficult to furnish the necessary food to light stocks when their combs are immovable. Straw hives with wide central apertures at the top may be provisioned by setting on them small supers with full combs; but if the feeding be somewhat late, one or two pieces of honeycomb or sugarcandy must be inserted through the opening, in order to bring the combs into direct communication with one another, otherwise the bees will not move upwards during cold weather, but die from hunger after consuming the provisions within the hive. Also, a small box containing a quantity of sugarcandy may be put over the aperture in the top of a straw hive; or large sealed honeycombs might be inserted in the hives themselves, by cutting away empty side-combs and fitting full ones in their place supported by small sticks, leaving the hive inverted during the night, and not replacing it until the combs have been properly fastened by the bees. As, however, many sealed cells are generally opened and the honey carried off, they perhaps, derive no more benefit than if fed with fluid honey.

If, however, one cannot furnish the bees with other food, such fluid honey ought to be given in time whilst they can fly a little, secrete wax, and are able to seal at least the greater part of the honey presented to them; since stocks with too many unsealed honey-cells generally suffer much in winter.

Combs with a great deal of unsealed honey are much colder to bees, whilst the exposed honey deteriorates in quality, attracts according to circumstances too much moisture, and becomes sour, or evaporates and becomes thick. At all events, it loses its aroma, and becomes disagreeable to bees, but especially so to man. If after bad years one should be obliged in the autumn to have recourse to other substances, such as dissolved sugar, malt, or potato syrup, treacle, or other sweets, feeding must be hastened and finished whilst the bees are still gathering, and by taking pollen have the power to purify these sweets and to change them into honey, although of an inferior quality. If the winter be favourable, and the bees are allowed to take flight from time to time for the purpose of cleaning themselves, one may bring the stocks through the winter; whereas in a long and severe winter they suffer as much, or may even perish, as if they had nothing but the honey gathered late in the autumn from the pine, fir tree, or from other so-called honeydew.

If bees should have consumed an unusual quantity during a severe winter, or if they have been fed too sparingly in autumn, much may be done during mild days in winter. Or with hives, such as the twin-stock, which can easily be moved, one may push honeycombs close to the bees' nest, and add new pieces of sugarcandy or honeycomb, &c. A disturbance if it take place but once, is of no consequence; under some circumstances it may even be an advantage, as the bees may then take the opportunity of bringing provisions into their nests, or of moving after their stores. But continued and repeated disturbances must be avoided, because they cause the bees to consume more food, and to suck up the moisture which condenses on the combs and the walls of the hive, and which may produce dysentery, and because when again congregating many bees remain behind and die from cold.

Speculative Feeding.—In this we have a different, almost an opposite intention, and a contrary mode of proceeding is, therefore, practised. Whilst the food given from necessity is administered in as large quantities as possible, in order to avoid frequent excitement and the commencement of breeding, and to insure this end one may even confine the queen, in speculative feeding an increased activity and more rapid breeding are the very points aimed at. The latter is most favoured by an uninterrupted and moderate pasturage, for whilst too rich a pasturage fills the brood-cells with too much honey, the entire want of it discourages the bees, and reduces them to inaction, and to cease breeding altogether. In imitation of a moderate pasturage, the food is either given repeatedly in small quantities, or so that they can dissolve and store but small portions. It is offered to them in a condition that renders it somewhat difficult to dissolve—such as candied honey, sugarcandy, or moist sugar, and the best place for it is below the combs (on the floor-board in lager-stocks), in order to cause the bees to come down and cover a larger number of brood-cells. Of course, a supply of moisture to liquefy the food, and which is indispensable in the preparation

of nutriment for the brood, must be cared for, especially if it should not condense sufficiently on the cool floor-board at a time when the bees are not able to fly out. Although for feeding of necessity in autumn, or even in winter, pure honey is in all cases the best; yet, when feeding on speculation, a mixture of honey and wort thickened by boiling, and afterwards, when the bees have become accustomed to it, merely thin malt syrup mixed with brown or any other kind of cheap sugar, may even be preferred; for this being a substance which requires to be changed into honey, calls the bees into activity, and excites them more. As it also contains more nitrogen it may, under certain circumstances—for instance, when the bees are not able to collect much pollen, promote breeding more than feeding with pure honey.

He who has the opportunity of making wort, or of obtaining it from a neighbouring brewery (of course, without hops or dregs) may prepare a cheap and good food for bees. The wort should be boiled a few hours, and when the mucilage has curdled and whilst simmering is formed into flakes it must be strained, again boiled, and mixed with honey or sugar. Once accustomed to it, the bees will take it without this addition. In an isolated apiary the food may be given during warm weather in the open air in troughs, water-tight boxes, &c. Of course, the surface of the food must be covered with wooden chips or straw lest the bees should drown therein, for they set about appropriating the gift in large numbers when they have once become accustomed to this mode of feeding. In a large apiary, however, such feeding in the open air causes too great a tumult and uproar, so that weak stocks hearing the swarm tune might be induced to rush out and desert their hives; wherefore, it is advisable, especially in early spring, to give to every stock its proper portion. Hives with moveable combs require no particular vessel for feeding, as the food may easily be poured into the cells of one or more combs, and inserted in the hive, or packed under the seat of the bees. As, however, on account of the nitrogen which it contains, the bees require pollen for the preparation of food for their brood, or, at least, are not able long to do without it, it becomes necessary to give them flour as a substitute when they are not able to collect it. This is best done in old combs placed in a sunny and sheltered spot near the bee-hives.

But if speculative feeding is to be of any real advantage, and food and trouble not entirely thrown away, it must not be begun too early; for whilst the air and the ground remain cold thousands of bees are enticed out of their hives and led to their death, so that though wishing to bring the stocks forward they are in reality only thrown farther back.

By speculative feeding before their stores are exhausted, bees are led into a certain error—they are induced to believe that pasturage for them already exists, which however, is yet wanting, and such an error in most cases brings with it its own punishment. Yet the excitement and activity produced by this delusion may also, in many cases, be of great advantage; for instance, if a driven swarm has been made, and we wish the bees to begin many royal cells, but unfavourable weather setting in threatens to defeat the intention; we wish for very early drones, and, perhaps, early and true young Italian queens; or drone-brood exists in the desired quantity, and when bad weather comes there is a risk of its being torn out; we have divided a stock and taken rather too many bees from it, so that it is to be feared that part of the brood may die before many young bees hatch out—in these and similar cases speculative feeding in order to increase the spirit and activity of the bees, and ward off the evils threatened by unfavourable weather will certainly be of use. Generally, however, little is gained by feeding, and my conviction is, that much, very much, honey is wasted by it. It is better to keep heavier stocks through the winter than to feed light ones afterwards. Consider feeding always an evil, and restrict it to the most pressing cases. Especially never feed on speculation, so as to lure bees into activity before the proper time, but at the utmost only in order to fill up gaps and pauses in the already-begun pasturage, and to keep breeding when fairly commenced in steady and uniform progress.—DZIERZON.

EXHIBITION OF BEES.

A NOVEL feature in the Exhibition of the Bath and West of England Agricultural Society which took place at Exeter last week, was the stall of Messrs. Neighbour & Sons, in which were exhibited bees at work, bee-hives, and apian appliances of every

description. There were two Ligurian stocks of bees at work, one in a full-sized Woodbury uncomb-hive, having been brought from London for the occasion, and the other in a smaller hive of the same description, being from the neighbouring apiary of our valued correspondent "A DEVONSHIRE BEE-KEEPER." Amongst the hives exhibited, the Woodbury frame-hive in straw appeared both novel and good, whilst amongst the apparatus artificial combs and the stereotyped plates for making them seemed to us the most worthy of attention.

There was a remarkably curious specimen of artificial comb or partition-wall partially fabricated into complete comb by the bees, which struck us as being well worth examination, showing as it did the various stages by which this transformation is effected, and being calculated to throw light on the problem as to the mode in which bees construct their combs. It is almost unnecessary to state, that this unique and instructive stall was crowded throughout the week, and we hope its financial results were such as will lead Messrs. Neighbour to continue their attendance at the Society's meetings.

BEES DYING.

ONE of my hives of bees during the late warm weather showed indications of swarming by hanging in large clusters from the floor-board. While I was watching them, a portion (say a fourth), fell to the ground dead. On the following day I put on a super to prevent swarming, into which they ascended and commenced work. On examining the super after the late rain, I found all the bees in it dead. Can you tell me the cause? The hive was well protected from the rain and cold. The stock was a weak and late swarm of last year, but well fed during the winter and spring. I have also observed the old bees carrying away the white grub.—CLARA NOODLE.

[Your bees probably died of starvation. See what is said below by "A. W."]

LIGURIAN BEES IN AUSTRALIA.

IN a letter which I have recently received from Mr. Edward Wilson, President of the Acclimatisation Society of Victoria, that gentleman says:—"You will be glad to hear still further good news of your Ligurian bees. By the last mail I hear that from one of the hives, three fresh stocks have been already formed, raising our number to six, and offering fine prospects for the spring. All the gentlemen who have had these bees under their charge are delighted at their manifest superiority over the common bee."

I need scarcely add how much pleasure it gives me to learn that my little favourites are vindicating their high character at the antipodes; and how ardently I trust that they may amply repay, by their prosperity, all the care which has been lavished upon them since their arrival in the colony.—A DEVONSHIRE BEE-KEEPER.

THE BEE-SEASON IN SOUTH DURHAM.

"WARSAW am Warsaw," as the Israelite said. This season makes the fourth bad one for bees, and I find very many hives have died out; and only about ten days since I saved one of mine in a box-hive by feeding and wrapping it up, as I fancied it was dying from both cold and starvation. From my inquiries, I should say half the bees have died in this part (South Durham) last winter and spring. It would appear that they have made very little honey up to this time (9th June); and I do not observe that they have frequented the May this season, and, therefore, suppose there is no honey to be had from it.

Many of your correspondents would be glad to have reports from bee-keepers in different parts of the country as to their success or failures.—A. W.

OUR LETTER BOX.

IS SALSIFY A POISON FOR FOWLS?—*Mada* has lost several hens and a cock, apparently of indigestion, and the only cause to which he can attribute it is his having thrown some roots of Salsify on to the rubbish heap. We do not think that, either raw or cooked, the roots would be poisonous, for we are not aware of any species in the genus that is deleterious.

BEES (C. C.).—For Ligurians apply to T. Woodbury, Esq., Mount Radford, Exeter. A new edition of our "Bee-keeping for the Many," much enlarged and with numerous illustrations, will be published in a few days.

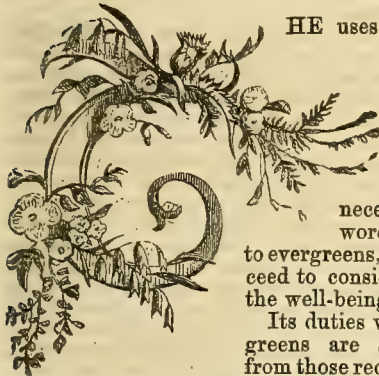
WEEKLY CALENDAR.

		JUNE 23—29, 1863.	WEATHER NEAR LONDON IN 1862.						Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
Day of Mnth	Day of Week.		Barometer.	Thermom.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.				
23	Tu	Teasel flowers.	29.850—29.743	degrees, 77—42	N.	—	m. h. 45 af 3	m. h. 19 af 8	m. h. 15 a 11	7	m. s. 1 46	174
24	W	MIDSUMMER DAY. NAT. J. BAP.	29.927—29.905	72—41	N.W.	—	45 3	19 8	35 11	8	1 59	175
25	Th	Sir J. Banks died, 1820. B. & G.	30.126—30.060	68—40	N.E.	—	45 3	19 8	58 11	9	2 12	176
26	F	Bedstraw flowers.	30.048—29.944	73—47	W.	.02	46 3	19 8	morn.	10	2 26	177
27	S	Plantain Shoreweed flowers.	29.804—29.686	64—39	N.W.	—	46 3	19 8	26 0	11	2 37	178
28	SUN	4 SUN. AFT. TRIN. Q. VICTORIA	29.914—29.829	67—34	S.W.	.07	47 3	19 8	2 1	12	2 50	179
29	M	ST. PETER. [COR. 1838.	29.988—29.900	72—50	N.W.	.02	47 3	19 8	48 1	13	3 2	180

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 73.0° and 51.3° respectively. The greatest heat, 93°, occurred on the 27th, in 1826; and the lowest cold, 34°, on the 24th, in 1859. During the period 141 days were fine, and on 111 rain fell.

USING THE WATERING-POT.

(Concluded from page 428.)



HE uses and abuses of the watering-pot as regards ordinary kitchen-garden crops and deciduous trees having been already detailed, it is only necessary to say a few words on it in its relation to evergreens, and I shall then proceed to consider its influence on the well-being of potted plants.

Its duties with regard to evergreens are somewhat different from those required by deciduous trees. As with these foliage is as

much a feeding-medium as the roots, and as most evergreens thrive best when partly in the shade, it is advisable on all occasions to shade the roots, or rather the ground the shrubs are planted in, after watering, in order to retain as much moisture in the ground as possible. Thereby in some degree we copy the design of nature, which invariably shades the space occupied by the roots of an evergreen by its own boughs. Thus, therefore, after watering newly-planted evergreens let them be shaded, or, what is better, covered with moss, litter, short grass, leaf-mould, or something that will prevent the direct action of the sun upon the ground and check evaporation. Rhododendrons, perhaps more than any other plant, require this to be done; even established plants that do not occupy the whole ground will be the better if the ground is shaded or covered in some way during the hottest part of the season. All newly-planted evergreens, too, or such as from necessity have been planted at a wrong season, are much refreshed by having their foliage sprinkled with water during the evenings—after the sun has left them, of course.

We now come to what is by far the most important use of the watering-pot—namely, supplying potted plants with their daily drink; for their artificial condition necessitates this, and it is here that the judgment of the operator is called into exercise. Any mere labourer can carry water and pour a large quantity of it where told, but some discretion is necessary to judge of the quantity required by each plant.

Serving all alike (a plan much too common), is death to a great many plants, while, unfortunately, it is too often adopted in busy times—witness a quantity of Cape Heaths in small pots subjected to the drenching of a coarse rose on the spout of a large watering-pot. The job is quickly done, and the operator is off to something else. Perhaps the next batch is pot-bound, and no ordinary amount of water will do any harm; but these receive only the same quantity as the newly-potted ones, and consequently suffer from lack of a sufficient supply.

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This state of things is unfortunately much too common, and the result is that plants of delicate habit succumb to it and die, while disease and a sickly growth follow with others that hold tenaciously to life. Now, the discreet use of the watering-pot is nowhere more required than amongst small or newly-potted plants. Generally speaking, the latter require but little water after being once attended to in that way; while the uneven growth and requirements of small plants alike call for more time and patience in supplying their daily wants than is generally accorded them, and such attention would save many from disease, and in some degree lessen the amount of “death in the pot,” so often referred to elsewhere.

Watering, however, is one of those duties which must be performed at some time or other; and whatever be the evils that arise from it, there is unquestionably much good. Plants grown in pots would not live without water; and where care and circumspection are used the watering-pot is perhaps second to no utensil whatever for its general utility. To use it discreetly, however, can only be learned by practice, or a careful attention to the appearances of the plants to be operated on. With large plants a tap with the knuckles against the side of the pot will enable the daily practitioner to tell by the sound emitted whether they want water or not, but this is too tedious for small plants; besides which, other tokens exist in them sufficient to guide the judgment. A knowledge of the requirements of the plants is also requisite; for some plants require a large supply of water, while others almost exist without it. All these things must, or ought to be, thought of by those wielding the watering-pot; and on the care and prudence by which they administer the daily drink of potted plants much of the success of these depends.

It would be wrong to close these notes without saying something on the description of water to be used for plants. Circumstances often necessitate an improper kind to be used, but when it is possible this ought to be avoided. The kind most suitable for plants is undoubtedly that with which Nature performs the same work—i. e., rain water. This ought not to be contaminated with any foreign substance of an obnoxious kind, which it often is when it remains some time in a tank cemented with some of the cements which give an unusual hardness to the water; neither ought it to remain long in a metallic vessel, that will also in like manner alter its character. Perhaps the best place is a pond or pool, exposed to the full action of the atmosphere, and where it has a chance to be warmed more or less by the sun; next to that is a wooden tub or a stone trough. At all events let the rain water be as pure as possible, and as free as can be from all mineral impurities that it has a chance to acquire in its reservoir. Next to rain water is pond water, if that be good and soft; river water ranks next, and that from wells and springs last.

Occasional mixings of the water with an enriching substance will in many cases be beneficial. But as this is entering upon another subject I will not pursue it further. I would however, again urge all who have the

No. 769.—VOL. XXIX., OLD SERIES.

means of preserving a supply of rain water to avail themselves of the chance, as there is no other water can be so properly used.

Amongst other erroneous opinions respecting the powerful influence of water that are entertained by those who direct its application to plants, are some rather odd notions. A writer to THE JOURNAL OF HORTICULTURE complains that his employer insists that all watering must be done after sunset or before sunrise. This at the time of year I write (June), must give rise to very early and very late hours indeed, but in no case whatever that I am acquainted with is it needed. Certainly a plant perishing for want of water ought to have it without delay whatever the time of day may be, only taking care not to wet the foliage in bright sunshine, or the globules of water left there will form lenses which will burn the plants; and as many small plants must be wetted on the foliage, it is only proper to do it at a time when the fierce rays of the sun are considerably abated, or before they acquire their full strength. When plants are established and seemingly not suffering much from the lack of water, but where they are certain to do so before another day is over, it is best to postpone the watering of such plants until the morning; for as all or most watering cools the ground, and thereby to a certain extent checks vegetation, it is better to delay this until the period when the sun is able to warm it again. When, however, the plant shows evident signs of distress let its wants be supplied at once, for to delay this duty until an established plant absolutely droops or flags is hurtful to that plant, especially if it be a hardwooded one, and Heaths and such plants soon show signs of neglect if treated improperly in the way of water.

In conclusion, it may be added that although the use of the watering-pot may be extended, the desirability of this is far from certain. Nature has endowed most crops with the faculty of enduring such periods of drought as she herself inflicts. Turf may look completely parched up after a period of hot dry weather, and apparently every vestige of life may be gone; but a day or two after a genial rain how it starts into life again! Trees and other large-growing objects are still better able to endure a summer's heat, by sending their roots down deeper or farther off for fresh food, and at the end of a dry season the congratulations of success in certain things quite equal the complaints of the shortcomings of others, where candour allows a fair hearing to all sides of the case. Although the use of the water-pot may be wanted to secure such crops as Lettuce in good condition, Peas on dry ground, Strawberries, and the like, it is more than questionable if one-half the water that is supplied to such crops does not do harm. Watering the ground between the rows so as to induce the fibres of the plants to extend themselves in search of what they want, is both encouraging to their growth and renders them less dependant on hand-feeding. Daily watering to such plants is not commendable, as it only tends to make them root near the surface, and, therefore, become a prey to the first gleam of sunshine that comes on a day they may not have received their usual allowance. Like most other things, plants are accommodating to a certain extent, and if inured to the hardship of trying to make a living for themselves they will do so; otherwise, if they are brought up by hand—i.e., kept as it were by hand-watering, they will trust to that support and become unable to provide for themselves when it is taken suddenly away. All out-door crops ought, therefore, to be watered with caution, and the matter thought of before it is begun, for it is far from certain whether more mischief than good has not arisen from out-door watering. Those, therefore, to whom nature denies the quantity of water to lavishly pour upon ground that it is not unlikely to do harm to, may console themselves that there are many other employments more certainly beneficial than watering often is. J. ROBSON.

THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITION.—JUNE 17.

HEAVY showers on the day preceding this Show gave rise to gloomy forebodings as to the probable character of the weather, and some prognosticated that the Horticultural Society would have "its usual ill-luck." Fortunately, however, these anticipations were not realised, the day having proved highly favourable; and although black clouds occasionally swept over the sky as if betokening the approach of a thunderstorm, the sun shone brightly throughout the day, and no rain fell to mar the pleasure

of the crowds who preferred the open air and the band of the Royal Engineers to the close, heated atmosphere of the Exhibition building.

The fine band of the Marines was posted during the afternoon in the centre of the nave, but though the result fully proved the capabilities of this part of the building in a musical point of view, yet the music was an interruption to the quiet which is desirable for the inspection of plants, besides which it offered a counter-attraction too strong for many.

Although the great height of the building exercised to some extent a dwarfing effect on the plants, this was much less than one would have expected; it must be borne in mind, however, that some of the specimens exhibited were of enormous size.

The Stove and Greenhouse Plants were both numerous and almost without exception large and well grown, though in some instances there was too evident an effort to secure the required shape by means of sticks and tying-in. The species exhibited were mostly the same as those seen at previous shows, and it will be sufficient to mention the names of such as were most remarkable in each collection.

Unquestionably the finest collection of fifteen came from Mr. Whitebread, gardener to H. Colyer, Esq., of Dartford, the specimens being of extraordinary size and in the finest condition. Amongst the most noteworthy were a magnificent *Ixora javanica*, an immense *Erica Cavendishii*, *Pteroma elegans* (a splendid plant), *Rondeletia speciosa*, *Epacris miniata splendens*, *Pimelea mirabilis*, *Vineia alba rosea*, that fine climber *Dipladenia crassinoda*, *Ixora coccinea*, and *Polygala Dalmeisiana*. To this collection a first prize was awarded. The second was given to Mr. Peed for a collection also excellent, in which *Ixora coccinea* and *salicifolia*, *Ericas Cavendishii* and *tricolor flammea*, *Vineia rosea* and *Dracophyllum gracile* were noticeable. Mr. Green was third, having a splendid *Erica obobata*, a fine pyramid *Iveryana Azalea*, *Kalosanthes coccinea*, *Allamanda grandiflora*, and others; whilst Mr. Baxendine, who was fourth, had *Allamanda Schottii* looking very fresh, *Hoya bella*, *Coleonema rubra*, *Aphelaxis humilis rosea*, &c. Mr. Rhodes, who received an extra prize, had a very showy plant of *Erica metuliflora bicolor*.

In the Nurserymen's Class for twelve Mr. Cole, of Worthington, near Manchester, took the lead, most of his plants being very large and fine. We particularly noticed *Aphelaxis macrantha rosea*, *Ixora coccinea* and *alba*, *Epacris miniata splendens*, *Pimelea mirabilis*, and *Phænocoma proliferum Barnesii*. Messrs. J. & J. Fraser were second with a collection in which were noticeable fine specimens of *Prostanthera lasiantha*, *Kalosanthes Angelina*, *Pimelea diosmæfolia*, *Phænocoma proliferum*, and *Boronia serrulata*, the latter, however, being deficient in flowers. Messrs. Lee, of Hammersmith, were third. They had a magnificent *Allamanda Schottii* with immense flowers; a pretty bushy *Leschenaultia formosa*; *Phænocoma proliferum*, also very fine; *Erica Candolleana*, *Clerodendron fallax*, and *Tetradlea verticillata*. Mr. Cutbush, of Barnet, was fourth.

In Class 3, for nine plants, the first prize was taken by Mr. Chilman, in whose collection there were fine plants of *Kalosanthes coccinea*, which is always very showy; *Erica Cavendishii*, fine; *Dipladenia crassinoda*; and *Aphelaxis macrantha rosea* and *spectabilis grandiflora*, both of them excellent. Mr. Page came second; some of the best here were *Allamanda Schottii*, *Dracophyllum gracile*, *Erica tricolor flammea*, and *Pimelea decussata*. Mr. Wheeler, who was third, had among others *Hedera tulpiferum* and *fuchsoides*, *Epacris pulchella*, and *Dracophyllum gracile*. Mr. Kaile received the fourth prize for *Roelia ciliata*, *Kalosanthes coccinea superba*, a large and handsome *Rhynchospermum jasminoides*, and other plants.

Mr. Tegg, gardener to Baron Hambro', Roehampton, had a second prize for a collection of six plants.

Of Fine-foliaged Plants a superb collection was exhibited by Mr. May, gardener to J. P. Butt, Esq., of Arle Court, Cheltenham, consisting of a magnificent *Cycas revoluta*, an enormous *Pandanus utilis*, *Theophrasta imperialis*, and *Jussieu*, *Aralia dactylifolium*, *Croton variegatum* and *pictum*, an immense *Pandanus javanicus variegatus*, and a splendid *Caladium Chantini*. Mr. Smith, of Syon, was second, his collection including fine examples of *Anthurium acule*, *Latania borbonica*, *Calathea zebrina*, *Caladium Chantini*, and *Martinsia caryotefolia*. In the collection from Messrs. Lee, who had the third prize, were fine specimens of *Cibotium princeps*, *Cyathia Smithii*, and *Cordyline indivisa*; and in that from Mr. Hutt, gardener to Miss Burdett Coutts, Highgate, *Philodendron pertusum*, *Latania borbonica*, *Dicksonia antarctica*, and *Pandanus utilis* were the most

remarkable for size. An excellent exhibition was also contributed by Messrs. A. Henderson & Co.

The Orchids, though not so numerous as at the last show, nevertheless afforded an extensive display; the Cattleyas, Vandas, Lælias, and Lycastes, which were exhibited in great numbers, forming a prominent feature, whilst *Ærides* and *Saccolabium* were everywhere seen in abundance. Many of the species and varieties, and, indeed, the very plants had, of course, been already shown at previous exhibitions, and to give a mere list of these would serve no useful purpose, it will, therefore, be sufficient to confine our mention to a few of the most remarkable, and to those not referred to on former occasions.

In the class for twenty, the first prize was taken by Mr. Milford, gardener to E. McMorland, Esq., Haverstock Hill. This was a fine collection, and it included the blue variety of *Vanda Roxburghi*, *Vanda Batemanni*, *Anguloa Clowesii*, *Brassavola Digbyana*, *Cypripedium grandiflorum*, the scarce *Barkeria melanocaulon*, *Lælia purpurata*, *Ærides odoratum* (very fine), *Cattleyas*, &c. Mr. Baker, of Stamford Hill, was second. Among the plants he exhibited were *Oncidium ampliatus majus* and *Cattleya Mossiae*, both very fine; *Ærides Schrederi*, Lobbi, and *odoratum purpurascens*; *Saccolabium guttatum Holfordianum*, and *curvifolium*; also, *Calanthe veratrifolia*, with several fine spikes of flowers. Mr. Page was third, showing among others *Orchis foliosa*, *Maxillaria* sp., *Cattleya superba*, and *Brassia verrucosa*.

In the Nurserymen's Class for twelve there was only one exhibitor—Mr. Woolley, of Cheshunt, who was awarded a second prize. *Lycaste Deppei*, *Camarotis purpurea*, *Ærides Fieldingii*, *Cypripedium Veitchii*, and *Dendrobium Griffithii*, were the most remarkable.

In the Class for ten Orchids, Mr. Penny, Regent's Park, was first with a good *Phalaenopsis grandiflora*, *Orchis foliosa*, *Dendrobium Parishii*, *Ærides Lobbi*, and *Cattleya Mossiae superba*. Mr. Green who was second, had a very fine *Oncidium lanceanum* and *Cyrtocentrum stellatum*; and Mr. Peed was third.

In sixes, Mr. Lovell, of Nutfield, had a fine collection which received the first prize. It contained excellent examples of *Brassia verrucosa*; *Cattleya Mossiae*, a fine mass of bloom; *Saccolabium Blumei* major and *guttatum*, both very fine. Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, was second; and Mr. Whitebread third. *Cypripedium Veitchii*, *Dendrobium densiflorum*, *Vanda tricolor*, and *Ærides odoratum* were the most worthy of mention.

For *Azaleas* the season was too far advanced. Mr. Page had a first prize for *Toilette de Flore*, Gem, Symmetry, Sir Charles Napier, *Eulalie Van Geert*, *Ferella*, *Chelsoni*, and *Striata formosissima*; but they did not nearly approach in beauty the fine plants exhibited at previous shows.

In the Class for six kinds sent out since 1858 Messrs. Ivery and Son had first for *Duc de Brabant*, F. H. Von Waldeck, *Leopold I.*, *Etoile de Gand*, *Striata floribunda*, and *Variegata superba*.

For six *Dracenas* and *Cordylines*, the first prize was awarded to Messrs. Jackson & Son, of Kingston, for fine specimens of *Cordylina heliconifolia*; *Dracena australis*, *Rumphi*, *indivisa*, *terminalis*, and *ferrea*, the latter large and very handsome. The second prize was given to Mr. Bull, of Chelsea for *Dracenas arbores*, *spectabilis*, *australis*, *Draco*, *congesta*, and *Cordylina indivisa*. He had also another collection, consisting of the handsome crimson *D. ferrea variegata*, *Ehrenbergi*, *brasiliensis*, *ferrea*, *fragrans latifolia*, and *australis*.

With regard to *Cape Heaths*, whether it was that some of the plants exhibited had somewhat deteriorated in beauty, or that from having been already seen at previous shows, they had lost some of their freshness, as the eye had become accustomed to them, they seemed scarcely equal to what we have seen before. Still the specimens were very fine, especially those sent by Mr. Peed. These consisted of *tricolor impressa* and *flammea*, *mutabilis*, *eximia superba*, *Massonii*, and *depressa*. Messrs. Jackson & Son, who also excel in the culture of this class of plants, received the second prize for *Bergiana*, *depressa*, *Candolleana*, *ventricosa magnifica*, *tricolor impressa*, and *nobilis*. Mr. Chilman who was third, had *obovata* very fine.

For *Anacothilus* Mr. Bull had the first prize, the kinds being *intermedius*, *Dayii*, *xanthophyllus*, *argyreus*, *Pogonia discolor*, and *Nephelaphyllum pulchrum*.

A multitude of other objects were shown; those coming within the scope of the Fruit and Floral Committees will form the subject of separate reports; whilst florists' flowers and some

other subjects will be taken up by our valued contributor "D." of Deal. There still remain, however, a few exhibitions to notice. Messrs. Ivery & Son had a numerous collection of British Ferns, some of them—as *Athyrium Filix-femina*, *Appelbyanum*, and *glomeratum*, and *Polystichum angulare Elworthii*—being both novel and interesting. *Iveryanum* and *micronatum* are also new and handsome varieties of the first-named species. Messrs. Jackson & Son had *Ouvirandra Berneriana*, a lattice plant differing from the better known *fenestralis*, which was exhibited by Mr. Bull, but much the same in its general aspect. Mr. Bull exhibited *Echites argyrea* (a climber of great promise), the handsome *Begonia Secrétaire Morren*, *Athyrium F. diffusum*, the green-leaved *Aucuba*, and other new Japanese plants, a white-variegated *Juniper*, *Asplenium rachirhizon*, a *Dioscorea* with ornamental foliage, *Marvel* and others of his new strain of *Mimuluses*, together with a fine collection of ornamental-foliaged plants. A collection of eighteen varieties of *Foxglove* came from Messrs. Ivery; *Bougainvillea glabra* from Mr. Turner, of Slough; *Allocasia Lowii* from Messrs. Low and Co.; and *Aralia Sieboldii* and *Cypripedium Stoneii* from Mr. Williams, of Holloway; whilst Mr. Standish had an extensive collection of Japanese plants, of which a variety of *Deutzia crenata* with double flowers—white tinged with pink—was particularly handsome. *Lychnis Senno* was another very ornamental flowering plant, the blooms being scarlet, and as large as a florin. There was also a striped variety, but it was not nearly so pretty. Messrs. E. G. Henderson & Co. exhibited a group of handsome new *Mimuluses*. In cut flowers, Messrs. Barr & Sugden had a great variety of *Irises*; Hooper & Co. hybrid *Ixias*, *Irises*, and *Gladioluses*; Messrs. Butler and McCulloch *Irises*; and Messrs. Fraser, Paul & Son, and Salter, cut *Pæonies* of every shade from white to the deepest red. Lastly, Mr. Whitebread had four magnificent specimen *Ixoras*, the kinds being *salicifolia*, *javanica*, and *coccinea*.

FRUIT.

The show of fruit, though extensive, was not so much so as could have been desired, or, indeed, expected at this season. Black Hamburg Grapes, of which, being the variety most extensively cultivated, we always expect to see numerous exhibitions, were not shown by so many competitors as they generally are, whilst of *Peaches* and *Nectarines* on the other hand there was a superabundance.

The first prize collection came from Mr. Masters, gardener to the Earl of Macclesfield, Tetsworth. It consisted of Black Hamburg Grapes, a *Montserrat Pine*, *Sherburn Castle Hybrid Melon*, *Royal George Peaches*, *Elruge Nectarines*, and a very fine dish of *Empress Eugénie Strawberry*. The second-prize collection was from Mr. A. Henderson, of Trentham, and was composed of Black Hamburg and *Trentham Black Grapes* (both fine), a *Black Jamaica Pine*, *Royal George Peaches*, *Violette Hâtive Nectarines*, and *Trentham Hybrid Melon*. Mr. Turnbull, of Blenheim, had the only remaining collection, in which were three fine bunches of *Muscat of Alexandria*, *Black Hamburg*, an excellent *Queen Pine*, *Royal George Peaches*, and *Sir Charles Napier Strawberries*.

Of *Pine Apples*, the best *Cayenne* came from Mr. Taylor, of Temple Newsam, Leeds; it was a fruit of the Smooth-leaved variety weighing 4 lbs. 14 ozs. The best *Queen*, weight, 4½ lbs., was from Mr. Hutchison, Castle Malgwyn. Mr. Hall, gardener to Earl Scarborough, had one of 5 lbs. 3 ozs.; and Mr. Young, Aberdare, a *Providence* of 12½ lbs.

Of *Black Grapes* the best were from Mr. Lawkins, gardener to G. Brassey, Esq., Bramfield, they being large and finely-coloured bunches of *Black Hamburg*. The second and third prizes were awarded to Mr. Turner, of Slough; and Mr. Jackson, of Tixhall Hall, for the same kind.

In *Muscats* the first prize was taken by Mr. Emberry, of Chadwell Heath, for good-sized bunches, not the largest but the ripest shown, some of the berries becoming of a fine amber colour. To ripen it properly the *Muscat of Alexandria* requires a great heat, and from the generally unripe state in which it is exhibited, it would appear that a sufficient temperature is seldom afforded to it. The second prize went to Mr. Turnbull, of Blenheim; the third to Mr. Turner, the bunches and berries large and fine but too unripe.

In the Any variety Class the first prize was given to Mr. Wills, of Oulton Park, for well-ripened but not large bunches of *Golden Hamburg*; the second going to Mr. Mould, Bushey

Heath, for Chasselas Musqué; and the third to Mr. Cross, for Sweetwater. In the same class Mr. Turner exhibited large but unripe bunches of Golden Hamburg; Mr. Pottle, Buckland Sweetwater; and Mr. Widdowson, Dutch Sweetwater. There was a sad lack of competition in this class, which is one well calculated to give encouragement to and bring out the qualities of new varieties.

Peaches were numerous, and generally very fine. The first prize was awarded to Mr. Rutland, for Noblesse, large and handsome; the second to Mr. Snow, Wrest Park, for Violette Hâtive, remarkably fine; and third prizes to Mr. Allen, of Hopwood Hall, Lancashire, for Royal George, and Mr. Brown, gardener to Sir C. Knightly, for large fruit of the Noblesse. Grosse Mignonne came from Messrs. Boreham, Turner, Cross, and Dawson; Royal George from Messrs. Wills, Turnbull, Cruickshank, and Horwood; and Bellegarde, from Mr. Richards.

Nectarines were also shown in abundance, and some in great perfection. Mr. Rutland had first prize for large and well-ripened Elruge; Mr. Brown was second with Violette Hâtive; and Mr. Horwood third with the same kind. The finest Nectarines shown, however, were those from Mr. Allen, gardener to J. B. Glegg, Esq., of Withington Hall, Cheshire. They were exhibited as the Scarlet, but were to all appearance the Elruge, and wonderfully fine they were, but from being in the Miscellaneous Class they were necessarily passed over without receiving an award.

In Cherries, Mr. Henderson, of Trentham, had first prize for Elton; Mr. Snow was second with Knight's Early Black; and Mr. Enstone third with Elton. Reine Hortense was sent by Mr. Curd, Royal Duke by Mr. Tillery, and May Duke by Messrs. Turner, Ford, Dunn, and Cross.

Strawberries, as exhibited by Mr. Smith, of Twickenham, could not have been surpassed. He was first for a single dish of British Queen, and in three dishes, for the same kind, Empress Eugénie, and Sir Charles Napier, the fruit being of the extraordinary size which he usually exhibits. Mr. Widdowson was second with Sir Harry, and took a similar prize in the Class for three dishes with that kind, Sir C. Napier, and Crimson Queen. Messrs. Turner, Turnbull, and Dwerrihouse, had also excellent exhibitions of Strawberries.

Several handsome Melons were shown. Mr. Terry, gardener to L. Ames, Esq., St. Albans, had the first prize in the Scarlet-fleshed class, and Mr. Meredith, of Garstone, Liverpool, took a similar position for a White-fleshed Hybrid Persian, of very fine flavour.

In the Miscellaneous Class, besides the Nectarines before alluded to, there were several excellent exhibitions of Royal George Peaches, and Violette Hâtive Nectarines, coming from Mr. Allen, of Hopwood Hall, Mr. Horwood, and Mr. Brown; and good Brown Turkey Figs were shown by Mr. Henderson, of Trentham, Mr. Smith, of Syon, and Mr. Cross, the two last-named receiving third and fourth prizes, whilst Messrs. Lane were awarded the first prize for a collection of Apples, Pears, and Cherries in pots, which bore every evidence of health, and were covered with fruit swelling, colouring, and ripe. Messrs. Lee had Cherries in pots; and Strawberries in pots were exhibited by Mr. Horwood and Mr. Cross, the former having Eleanor, the latter Alice Maude and Trollope's Victoria. The fruit of *Passiflora quadrangularis* was also shown, and some well-coloured Tomatoes, as well as a few Apples of last year.

TABLE DECORATIONS AND FLORISTS' FLOWERS.

A wet, cold and damp morning seemed to portend one of the old Chiswick days of the Horticultural Society; but before twelve o'clock the sun shone forth with great brilliancy, and a splendid afternoon attracted a large number of lovers of flowers, lovers of display, and lovers of sight-seeing from all quarters. The Oxford Commemoration detracted, doubtless, from the brilliancy of the fête, by keeping many distinguished persons away; but notwithstanding, the *Dilkoosha*, as a writer in the *Times* facetiously calls it, was crowded with a large assemblage of the upper ten thousand, to witness a very fine display of flowers, and, I believe, fruit; but the latter was so far off from the former, that I for one did not venture on it; and was therefore untempted by what I have no doubt was exceedingly good to look at, but exceedingly sour to the bystanders. The mistake of separating the music *in toto* from the Show was not committed this time, and the presence in the nave of the splendid band of the Royal Marines was a great improvement, attracting a large

number there who thus perforce visited the flowers, who would otherwise have only loitered about the gardens.

The plants and flowers were arranged, as before, down the nave, and filled it from one end to the other. The subjects entered for Sir W. Dilke's prizes were in the southern arcades on entering, while the fruit was in the western arcade. Ample space was thus given for promenading, and the subjects could all be seen to great advantage. As before, however, I think the plants looked dwarfed, owing to the great size of the place, and a temporary awning would have greatly improved it. It is to be hoped that when the Rose Show takes place something will be adopted to protect them from the great heat and glare, or, as I saw in the boxes exhibited to-day, they will not stand much chance.

If imitation be the truest flattery, then assuredly Mr. March ought to feel highly flattered, for nearly all the groups exhibited for Sir Wentworth Dilke's prizes were modifications of his original design; so much so, indeed, that it is a question now, I think, whether we have not had enough of this table decoration. Originality of design there seems to be none; and the differences between the groups are only differences of arrangement. If the thing is attempted again, Sir W. ought to attach one condition—"No birds, beasts, or fishes allowed;" for, with all due deference to the ladies who adjudicated, loves of humming-birds were quite out of all character, and ought, in my opinion, and that of many others whom I heard speaking about it, to have disqualified the exhibitor. They were, too, in such abundance, that the eye involuntarily rested on them, and this, in my opinion, is a proof of incorrectness in taste. The perfection of dressing is when you can say, "How beautifully dressed that lady is!" though neither her bonnet, shawl, nor dress especially attract the eye. So here, too, if the principles were correct which at the first Exhibition made the almost unanimous voice of the multitude second the decision of the Judges in adjudicating to Mr. March and his sister the first prize, because of the simplicity and elegance of the design, then was the decision of to-day quite erroneous.

The prettiest design there was in my opinion Lady Holmesdale's; but this was spoiled by the introduction of some china swans on the plateau. More of this anon—I am in duty bound to take in the order of merit as arranged by the Judges.

The first prize was awarded to Lady Rokeby. This group was founded on the original design of Mr. March, the stand consisting of a plateau, glass rod, and smaller dish on the top. There was a deviation from it in small tubes, which sprang out of the body of the stand, and in which were placed some fronds of light Ferns. Around the base of each stand, instead of the Ferns or Vine leaves recommended and used by Mr. March, there was a wreath of *Cissus discolor*; *Caladium argyrites* for the centre, and *Coleus Verschaffeltii* for the third. The *Caladium*, we think, was a mistake, not being sufficiently in contrast to the white cloth. There were some bunches of Grapes, some of which the humming-birds were supposed to be eating, while others rested on the Fern fronds. It was altogether pretty, but for the reasons I have indicated above it did not stand A1.

Mrs. J. Worthington Bliss, Langton, near Tunbridge Wells, obtained second prize. This, too, was a modification of Mr. March's, some fine fruit being both in the top and stand, with *Stephanotis floribunda* twining up the stem. This in my opinion was superior to Lady Rokeby's.

The third prize was awarded to Mrs. Walter Fawcett, of Westbourne Street, Hyde Park; and it is an evidence that much latitude must be allowed to Judges of matters of taste, when I know that many thought this should have been rewarded with the premier prize.

Those commended were Lady C. Kerrison, whose group consisted almost exclusively of fruit, with a white china centre-piece. Mr. A. Salter, William Street, Hammersmith, had a very pretty set. The top dish was supported, not by a glass rod, but by four light wires, on which, to hide them, were tied some nice fronds of Ferns. Lady Holmesdale had glass ovals instead of a straight glass rod supporting the top, Ferns, Grapes, and some choice Orchids being mixed with them. Mr. Thompson, of 17, Royal Crescent, had a very large plateau into which gold fish were introduced—quite, as I think, out of place, unless it was intended that each guest was to catch his own and have them cooked according to his own fashion. It was, I think, very properly passed over by the Judges. On the whole, my belief is that the original design has never been equalled for simplicity, elegance, and agreement with the principles of correct taste;

and that, as nothing more desirable seems likely to be attempted, it would be well if decoration for some other purpose were encouraged.

It would be impossible, while writing on this branch of the Exhibition, to omit reference to the very beautiful *jardinières*, the invention of Mr. March, which were exhibited in the nave, and bore evidence of the same correctness of taste which has linked his name with table decoration both here and abroad; for it was no little gratification to see on the table of one of the first hotels in Paris, whose *salon* is considered to be hardly excelled for beauty, his stands as forming the decoration. These *jardinières* were glass tables formed of glass of a peculiar character, and white metal—silver or otherwise. The foot was a tripod, holding within it a small dish for flowers; the stem which supported the table of glass, also protected by silver wire, in one case being a succession of knobs, which gave it a very brilliant appearance, while the top was also glass filled with flowers arranged with great taste and judgment. It is impossible to give an accurate description of this very beautiful table, or to convey an idea of the extreme brilliancy of its appearance; but as it will doubtless be exhibited at other shows we would strongly advise all who have large and handsome rooms, and who admire brilliancy of effect without gaudiness, to see for themselves, and we hardly think they will go away without becoming purchasers. The glass was manufactured by the well-known firm of Dobson & Pearce, of St. James's Street.

The Florists' Flowers were especially fine; and although the Council afforded but scant favour to cut flowers, some very beautiful things were placed in that marvellously heterogeneous class—Miscellaneous. Let us hope that next year they may, having learned by experience, do something more for this most popular division. I have only again to repeat that the most crowded parts of the Show were where these were exhibited, while greenhouse plants, &c., were comparatively deserted.

The Pelargoniums were very fine indeed—in fact, such plants as those exhibited by Mr. Nye, Miss Foster's gardener, of Clewer, it is impossible to excel. There was one plant there in his collection—that fine old variety *Sanspareil*, which was a perfect marvel of growth. Others were also fine, but this bore off the palm from all others. His flowers were *Perdita*, *Fairest of the Fair*, *Sanspareil*, *Lord Clyde* (splendid colour), *Desdemona* (beautiful plant), *Rose Celestial* (magnificent both as to plant and quality of bloom), *Ariel*, and *Etna*. Mr. Shrimpton was second with *The Bride*, *Sanspareil*, *Stella*, *Guillaume Severyns*, *Lord Clyde*, *Festus*, *Prince of Prussia*; third to Mr. Page; and an extra (why I know not), went to a collection all sticks and no bloom, which in my humble opinion ought not to have been there at all.

Amongst Nurserymen Mr. Turner and the Messrs. Fraser were the only exhibitors, and in the above order. Mr. Turner's plants were very fine. They were *Prince of Prussia* (somewhat of a dirty look), *Nestor*, *Flora*, *Bacchus*, *Modesty*, *Viola*, *Fairest of the Fair*, *Pizarro*, *Lady Canning* (most lovely), *Lord Clyde*, *Ariel*, and *Beauty of Reading*. Messrs. Fraser were second with *Lightning*, *Guillaume Severyns*, *Lillie*, *Osiris*, *Peacock*, *Monarch*, *Prince of Prussia*, *Etna*, *Sunset*, *Viola*, *Matilda*, *Bacchus*.

In Fancy Pelargoniums the Messrs. Fraser were first with *Roi des Fantaisies*, a bright, showy, but badly shaped flower; *Claudiana*; *Bridesmaid*; *Clara Novello*; *Delicatum*, a nice light, though of indifferent shape; and *Lady Craven*. The second prize was awarded to Mr. Turner for *Clemanthe*, *Claudiana*, *Delicatum*, *Cloth of Silver*, *Evening Star*, and *Roi des Fantaisies*. A very sharp and close race was run in spotted or French kinds between the Messrs. Fraser and Mr. Turner, which the Judges could only settle by giving them equal firsts. Mr. Turner's flowers were Mr. Marnock, a beautiful plant; *Guillaume Severyns*; *Osiris*; *Rembrandt*, bad; *William Bull*, very bright and showy; and *Spotted Gem*, an exquisite plant. Mr. Fraser's were *Madame Furtado*, *Mazepa*, *Sanspareil*, *Bracelet* (good), Mr. Marnock, and *Excelsior* (fine).

It is, we think, unfair upon both Judges and exhibitors to constitute such a class as the best collection of Roses; for one man will interpret that as the best which has the largest number of blooms, and another that which has the best blooms, and hence it generally leads to confusion and disturbance.

As I long ago predicted, when Mr. Turner began Rose-growing, he has become a thorn in the side of some of the older exhibitors, in the present case taking—and deservedly, as I think—first place. Amongst his Roses we noticed *François Lacharme*, very fine; *Catherine Guillot*; *Madame Charles Wood*, very

large; *Général Jacqueminot*; *Anna Alexieff*; *John Waterer*; *Amiral Gravina*, fine dark; *Senateur Vaisse*; *La Brillante*; *Devoniensis*; *Mademoiselle Bonnaire*, good white; *Narcisse*; *Louise Darzins*, best white *Perpetual*; *Madame Boutin*, new and good; *Madame Furtado*; *Comtesse de Chabrilant*; *Madame Boll*; *Vicomte Vigier*; *Paul Ricaut*; *Charles Lawson*, &c. Messrs. Paul & Son and Mr. Mitchell were equal seconds. In the former lot were some few of the new Roses of this year; and, if one may form an opinion, they seem to bear out the conclusion I formed from my visit to Paris last year, that 1863 would not be distinguished for anything very brilliant. *Duc d'Anjou* was pretty; *Madame Helye*, curious shelly flower; and *Deuil de Prince Albert*, good purple; his own *Lord Clyde* was very fine; *Baron Gonella* better than I have ever seen it. In Mr. Mitchell's were some very fine varieties; *Maréchal Vaillant*, good; *Gustave Rousseau*, also good; *Maurice Bernhardt*, fine; *Christian Puttner*, a good dark Rose.

Mr. Turner had a fine box of Pinks, consisting of the following varieties:—*Pride of Colchester*, *Devise*, *Miss Glover*, Mrs. Lamb, *Prince of Wales*, *Titians*, *Constance*, *Victory*, *Cristabel*, *Dr. Maclean*, *Lord Elcho*, *Princess of Wales*, *Samson*, *Diadem*, *Lizzy*, Mrs. Turner, *Minnie*, *Nina*, *Blondin*, *Kentish Volunteer*, and some seedlings. The lacing of these was very beautiful, and the individual flowers were large.

Of other cut flowers there was a very pretty collection of *Ixias*, *Sparaxis* and other allied bulbs, amongst which *I. viridiflora*, *crocata*, and *crateroides* were noticed as being very pretty. This is a class of flowers that must become popular. Messrs. Downie & Co. exhibited thirty-six Show and thirty-six Fancy Pansies; also their excellent bedding *Calceolaria Cloth of Gold*, and the new *Delphinium bicolor grandiflorum*. Mr. Turner had a fine box of *Verbenas*, containing, amongst others, fine blooms of *Lord Leigh*, *Lord Craven*, *Firefly*, *Fairy*, *L'Avenir de Bellant*, &c.

Two very fine collections of exotic Ferns were exhibited—the best by Mr. W. Bull, the second by Messrs. A. Henderson. Mr. Bull's contained magnificent plants of *Cibotium princeps*, *Cyathea dealbata*, *Cibotium culcita* and *Barometz*, *Gleichenia flabellata* and *dichotoma*, *Alsophila radens* and *excelsa*, *Marattia elegans*, *Dicksonia antarctica*, and *Davallia dissecta*. Messrs. A. Henderson had *Drynaria muscifolia*, *Gymnogramma calomelanos*, *Cibotium Barometz*, *Adiantum tenerum*, *Lastrea patens*, *Cyathea boconensis*, *Phlebodium pulvinatum*, *Cibotium Schiedeii*, *Alsophila australis*, *Angiopteris evecta*, *Drynaria coronans*, and *Brainea insignis*.

Messrs. Ivery had a beautiful collection of British Ferns, comprising *Asplenium adiantum nigrum acutum*, *fontanum Halleri*, *septentrionale*, *trichomanes*, *trichomanes ramosum*; *Athyrium Filix-femina*, *F. f. conoides*, *crispum*, *diffusum*, *Fieldiae*, *Iveryanum*, *multiceps*, *mucronatum*, *plumosum*; *Blechnum spicatum* *polydactylon*, *ramosum*; *Ceterach officinarum*; *Cystopteris fragilis regia*; *Lastrea lepidotha*, *Filix-mas cristata*, *pumila*; *Osmunda regalis cristata*; *Polypodium phegopteris*, *Robertianum*, *vulgare cambricum*; *Polystichum foliosum*, *angulare varians*, *Wollastonii*; *Scolopendrium vulgare crispum*, *endiviatifolium*, *marginatum*, and *sculpturatum*.

Amongst the new flowers exhibited was a large quantity of seedling Geraniums, but very inferior both in number and quality to those exhibited last season. There were two very fine flowers of Mr. Hoyle's—*Achilles*, a magnificent high-coloured *Beauty-of-Reading* style of flower, of perfect shape, and with a beautifully clear white throat; and *Artist*, already noticed. There were also *Gloxinias*, *Mimuluses*, bedding *Geraniums*, &c., which will, doubtless, appear in your report of the Floral Committee's proceedings. Nor can I omit the very beautiful double *Deutzia* sent by Mr. Standish, another of the valuable contributions from Japan, and as a hardy shrub most valuable for our gardens.—D., Deal.

UNJUSTIFIABLE EXCLUSION OF GARDENERS FROM AN EXHIBITION.

I BEG to forward the schedule issued by the Royal Belfast Botanic and Horticultural Company. The rules laid down for the admission of gardeners have caused very great dissatisfaction amongst the exhibitors and gardeners in general, as they consider themselves grossly insulted in being invited to send their productions to the Show to be held on the 27th August, but are not to be admitted to the place of exhibition themselves except

for a short time to see what prizes they have taken, and for half an hour before the Show closes.

The gardeners have held a meeting, at which it was resolved, and the resolution signed by fifty-four gardeners, that if they, the exhibitors, were not to be admitted at a reasonable time after the public, they would not on any account send their productions to the Show. Are the exhibitors asking more than they have a right to expect from the above Company? The gardeners of Belfast and neighbourhood will feel greatly obliged if the Editors will please to give their opinion on this subject.—N. T. Y., *Belfast*.

[To apply to the rule for such an exclusion of gardeners the mildest term it deserves we reprobate it as very unreasonable. At the London exhibitions gardeners are admitted at all times during which the public are admitted, and at such exhibitions gardeners certainly have as fellow-spectators members of the community as high in position as they will have at Belfast. So far from submitting, as the Belfast gardeners seem willing to submit, to be admitted "a reasonable time after the public," we advise them not to submit to be admitted a second later than any one else. They will have too much good sense, as have their brethren elsewhere, to inconvenience any one; and, moreover, their presence is desirable, and we know of more than one member of the aristocracy who delights in seeing and obtaining information from gardeners at such gatherings.—EDS. J. OF H.]

BHOTAN RHODODENDRONS—AMARYLLIS CULTURE.

I HAVE been anxiously expecting intelligence from Mr. Cox, of Redleaf, respecting "the yellow-looking, smooth flower-bud," exhibited by a Bhotan Rhododendron under his care. Have the buds expanded, and what are the blossoms like? Is it hardy, and where can it be purchased? I have heard of one this year producing white funnel-shaped flowers, with a deep orange-coloured centre, and most deliciously fragrant.

As to the Amaryllis and its varieties—I have read with much interest Mr. Anderson's paper respecting this beautiful bulb, and I am surprised that it is not more generally cultivated. I have a fair collection, and flower them well with very little trouble. When I first commenced their cultivation I had only a few, but possessed a roomy hot pit, in which they grew and bloomed vigorously, enabling me to make my drawing-room gay during the dreariest days in winter. At my present residence I have only a large greenhouse, with Melon-frames. In the autumn and winter the dormant roots are stored away under the flue, and kept there till my bedding Geraniums can be removed from a deep pit, which is then filled with tan, and the pots of Amaryllis, about one hundred in number, are plunged in the fermenting material, and in about a few weeks come into bloom, and become beautiful ornaments in my conservatory. The warmth of the greenhouse enables them to mature their foliage and ripen their roots. Many of my bulbs are seedlings of my own, and though they might not "pass muster before the Floral Committee," are really beautiful decorative objects. The list of varieties given by Mr. Anderson in No. 113 is very tempting, and it would be a kindness to me, and, perhaps, to many others, if he would say where they are to be purchased.—A DEVONIAN.

HEATING GARDEN STRUCTURES.

(Concluded from page 436.)

THE small Arnott boiler will heat 100 feet of four-inch pipe, consume less fuel than any boiler known, and require less attendance than most.

Small boilers, however, consume more fuel proportionately than larger, and take nearly the same quantity as a flue; and the first cost of one being nearly double that of the other, persons ask themselves, "What is the good of having a boiler when I can get a flue for half the money?" If you measure the growth of plants by their cost, and can see goodness in cheapness, and derive more pleasure from badly-grown plants than from those well grown, by all means keep to flues.

A clever man may do as much with a flue as a bungler with a boiler; but give a clever man a boiler, and where is your flue? Gone for ever. If an amateur's experience is limited to flues, how can he form an opinion of heating by hot water? I feel

sure that many amateurs keep to flues for economy; but were they in a position to have a boiler, I have no doubt which they would prefer. I also grant that some may have a house heated by a flue doing good service, even better than his neighbour's boiler; but how much more indomitable perseverance is possessed by one than the other? More depends on a patient dogged perseverance than on the merits of a system, and on a knowledge of details than all the fine theories possessed without application. Diligent attention and the application of a few matters will do more to insure success in cultivation than all the learned ologies, as Mr. Fish puts it, with carelessness and no application.

Mr. Robson must take a similar view, for he wishes to heat a house by hot water, which is strange considering that he pronounces hot air as good for vegetation as hot water. Why does he want hot water for a house to be kept at a high temperature, when he writes flues are as good? It appears to me as if he was desirous of taking the opinion of others on this question, and makes a few extreme remarks in order to provoke a discussion. The call has been only moderately responded to, and I hope all of us will contribute our mite, and if we do, I am sure the fate of flues will be sealed for ever.

Though "E." prides himself in being able to heat a house 110 feet long with a flue for less money by half than the cost of a hot-water apparatus, I will not say that he cannot; but I do say he cannot keep the frost out of such a house unless he has a blasting-furnace and a flue like a town sewer, and that he would burn more coal in a month than will afford ample to last a boiler a twelvemonth. I cannot see how he would heat the house with one flue at all; but he, no doubt, has a novel plan of his own as rare and as simple as the one so lately given in this Journal. "E." will, perhaps, tell us the quantity of space he calculates a superficial foot of flue to heat, how hot a flue will be after it has travelled 20 yards, to say nothing of 50, and whether he could not roast a ham in the chimney after all. I have known a flue fire traverse 30 yards of bricks and mortar, and though the flue was not warmer than an adjoining wall, the heat in the chimney was more than the hand could bear. Soot in a flue, 3 inches or more thick, forms a barrier against the absorbing powers of brick and prevents the flue heating, as any housewife knows her oven heats badly unless it be clear of soot. As "E." is so confident of his wondrous flue-knowledge, I invite his attention to an estimate for heating a house for a vinery 110 feet long, 20 feet wide, 5 feet high at sides, the roof a span at an angle of 45°.

	£	s.	d.
Boiler	12	0	0
Sliding doors, &c.	2	2	0
Fire-bricks, ship, or fire-clay, common bricks, and mortar	0	15	0
Boiler-setting and chimney-building, mason and labourer, four days, including firehole, digging and walling round	1	8	0
520 feet of four-inch pipe, or 4 tons 4 cwt., at 5s. per cwt.	21	0	0
Bends, elbows, &c., 4 cwt., at 11s. per cwt.	2	4	0
Fixing pipes, with materials.	6	10	0
	45	19	0

This would contain 22,000 cubic feet, and 148 feet of heating surface at a temperature of 212° would be required to heat it and keep the temperature at 62° steadily; but having also 3880 feet of glass, or cooling surface, four times that quantity of heating surface will be required to secure a temperature of 55° in all weathers, and six times a philosopher's calculation to maintain a temperature of 60°.

"E." will be so good as give his estimate, for according to my notions he would want four flues and as many fires to obtain the same heat and a result below par. The boiler would consume a ton of coke fortnightly for four or six months according to the season and the time the fruit is desired to be ripe, which at 6s. per ton is £3; but his flues would consume a ton a-week of small coal in all weathers (for flues do not burn coke well), two in severe, which at 7s. 9d. per ton, would give 20 tons, £7 15s., being £4 15s. in favour of the boiler, with one-quarter the trouble and attention; and whilst a gardener could leave his boiler and house in perfect security at 6 P.M. in mild weather, and at 8 P.M. in severe weather, "E." would have to stoker hard every three or four hours, and go to bed late with a conviction in his mind that he must be up early, long before nature is awake. Thus the boiler would save £4 15s. annually, which in seven years amounts to £33 5s., during which time the boiler would not cost 6d. beyond 3s. 6d. in cleaning out once a-year, whilst "E.'s" flues would cost at least 7s. 6d. in sweeping and washing with lime water, to say nothing of repairs, and at ten years' end the boiler would have saved its first cost by consuming so little fuel. The pipes would

be as good as ever, the boiler last another ten years, and the owner would not be pestered with hydrogen smells, nor see his Vines drooping and scorched with fire-damp and a crazy flue, after wasting £47 or more, enough to build the owner a moderate-sized greenhouse.

We had a boiler put in in 1835, and though old and worn it was not useless when it was removed to make way for a larger, and the pipes were as good as ever—they had never cost a penny in repairs, and they did not need any after twenty-seven years wear and tear, neither can they be distinguished from new pipes. I mention this boiler and pipes in justification of my statement, for some people have an idea that boilers are soon worn out.

In heating a number of houses hot water is without an equal; but having given the cost of heating five houses by flues I will heat them with hot water by way of comparison.

The range is 180 feet by 18, all of them kept at a high temperature; costing for heating with flues £47 10s., and £26 10s. in fuel annually.

	£	s.	d.
Boiler	20	0	0
Doors and frame	3	3	0
1400 feet of four-inch pipe, four pipes in front, two at back, and two along each end	70	0	0
Branches, elbows, syphons, connections, and valves	24	0	0
Boiler-setting, preparing-for, materials, chimney-building, &c.	4	3	6
Pipes, fixing with materials	27	0	0
	£148	6	6

We have the sheds heated by the connection-pipes, plants in some, Mushrooms in others, potting-shed as nice as possible, and all arranged so that one can be heated at once or them all, separately or together; and a couple of pipes run under the tanpits so as to keep the beds warm. All this is done with the fuel of one fire, saving annually the fuel of eight fires, and doing the work as well again, without blowing-up anything or robbing ourselves of sleep, of which it is said, "Six hours is enough for a man, seven for a woman, eight for a fool;" but I recommend the fool's portion for every one. Also by carrying the connecting-pipes along the sheds you will do away with bothies. That is worth more than all the good hot water ever did; for I estimate inventions nothing unless they give less manual labour, and are more economical, and conducive to health and comfort. Bothies are repositories for weary limbs, cause unhealthiness, breed disease and demoralisation, and are altogether unfit for human habitations. The sooner under-gardeners are driven out of them, and a comfortable house provided with a thorough draught in an open situation, the better it will accord with the objects by which they are surrounded, and the more conducive will it be to the owner's interests and the inmates' social and moral advancement.

Owing to our saving the fuel of eight fires we nett £21 4s. yearly, which will in seven years amount to £148 8s., thereby clearing the cost of the apparatus in that period; but with a crazy set of flues the real expense attending them is only fairly beginning.

Now, coals may make a difference—that is, their cost, in speaking of the relative merits and defects of flues and hot water. Where a range of houses is heated by flues and fuel is cheap—say 2s. 6d. per ton, it may not be wise to take out the flues and replace with a hot-water apparatus; it may not be more economical, but it will be better and far more garden-like. A man upholding flues appears to me to be similar to a thrasher contending there is nothing like a flail to thrash corn—he had rather do the work of a horse or a steam-engine than allow his mind to move with the age.

Just one point more and I have done for the present. "Where the houses are wide apart, it is more economical and satisfactory to heat them with flues than hot water." In a case like that the boiler works at a disadvantage, heating a greater length of pipe outside the house than within. But with that drawback I contend hot water is the cheapest and best in the long run; for instead of using four-inch flues we use 1½-inch wrought-iron pipes, and the same for returns—that is, all the connections are 1½-inch, costing 6½d. per foot, increasing the heating powers of the boiler one-third, promoting a quicker circulation, and giving a very satisfactory result. We have six houses heated on this principle; and instead of employing 1200 feet of four-inch piping we have but 800, the remainder are 1½-inch; so that we have a boiler with little work, and capable of putting limbs on to plants where we have flues taking them off by wholesale.

I hope to see the flues brought down to their proper level, the rubbish-heap, soon; and by using 1½-inch connection-pipes to heat more houses, than can be done in the ordinary way. I may say the work is done better by 1½-inch connections than with four-inch.—G. A.

HARDY PALM.

CULTURE OF CYANOPHYLLUM MAGNIFICUM.

Will you tell me the name of the Palm which stood out last winter at Kew? It is very much like the *Latania borbonica*. I was round there in October, and all the Palms were then taken in except this one.

What height does the *Cyanophyllum magnificum* usually attain in its native clime? I grew one here 11 feet high, having leaves 26 inches long and 13 inches broad. The stem was 2 inches in diameter. I never saw one so fine before, and so said all visitors. It is cut down now, and a very nice walking-stick made with the stem. If you think it was unusually fine, I could tell you how it was grown, as it had a peculiar treatment.—A YOUNG GARDENER.

[The Palm you mention is Fortune's *Chusan Palm*, *Chamaerops Fortunei* of Hooker, formerly called *C. excelsa* in English gardens. At Kew it requires the protection of a mat in severe weather; but in Her Majesty's garden at Osborne it has hitherto stood unprotected.

Certainly we never saw *Cyanophyllum magnificum* so lofty as you mention, nor the leaves so large. These are usually about 24 inches by 9 at the broadest part. We shall be obliged by a statement of your mode of culture.—EDS. J. OF H.]

LILIUM GIGANTEUM CULTURE—DISA GRANDIFLORA.

HAVING been successful in growing the *Lilium giganteum*, the culture which I have followed might be useful to many of the readers of THE JOURNAL OF HORTICULTURE.

I have had this season two bulbs in a fourteen-inch pot, each of which has sent up a flower-stem 10 feet high. One stem had thirteen flowers and the other twelve, and beautifully sweet-scented.

The growth was commenced the first week in February in a cold pit, no heat applied at any time—merely protection from frost. The soil I used was one-half the top spit of a meadow well pulverised, the other half peat and sand well mixed together. When fairly in growth I gave water in abundance, and liquid manure, not strong, about twice a-week. I believe that if the pot had stood in water about an inch or so above the drainage in the pot it would have been more beneficial to the plant, for, this being of quick growth and gigantic stature, requires water in abundance.

I have a plant of *Disa grandiflora*, a sucker from one which was sent here from M. Schiller, of Hamburg, last April twelve-month. It is now nearly 12 inches high, and it seems to be forming a head at the top. Do you think it is likely to flower? As I have not seen any other *Disa* I am at a loss to know. The plant is healthy and growing fast. If it should bloom I will, if acceptable, send you a few lines as to how I have proceeded with its culture.—J. EASTWOOD, Gardener to E. Nathan, Esq., Didsbury Lodge, Manchester.

[We think the *Disa* is progressing properly. We shall be obliged by particulars of its culture.—EDS. J. OF H.]

NEW BOOK.]

The In-door Gardener. By Miss Maling. London: Longman and Co.

WE regret to see by this title-page that Miss Maling again has changed her publisher. This is the fourth or fifth time within about twelve months, and such deficiency of permanency is usually indicative of an author being either unpleasant to co-operate with, or that his works are not profitable; or, as in some instances, that these disagreeables have a combined influence in causing such changes. If the other productions of Miss Maling have had a small sale, for the present volume we cannot

anticipate a better success; and were it not on a popular subject we should not occupy our space, even briefly, by uttering a word of warning concerning its contents.

Miss Maling, like many other ladies, has a great love for flowers, combined with excellent taste in arranging them; and she has frequently published in various forms her judgments upon such arrangements; but now that she offers to instruct in flower-culture, we regret to have to warn our readers she must not be accepted as a teacher. The practical cultural portions of the present volume are chiefly derived from other sources, our own columns amongst the rest, though in our case Miss Maling does not seem to acknowledge the justice of the axiom, that what is worth borrowing is worth acknowledging. We might complain, also, if it were worth while, that each page, contrary to all custom, is headed "In-door Gardening," the name of one of our publications, although the title of Miss Maling's work is "The In-door Gardener."

As the first qualification required by a teacher is correctness,

we should advise a page of corrigenda to be inserted, in case the volume should not reach to a second edition, for there are no such names among plants as *Gneorum*—*Chautini*—*Lycopodium apoda-cesium*, &c. Such errors, however, with the exception of repeated *Dennstatia*, may be typographical, but there are others more weighty. For instance, *Loam* is defined as "any fertile growing soil, not exclusively formed of some one material like peat, or clay, or sand, or leaf mould," which is such a tissue of error ill-expressed, as would require more time to explain than we are willing to bestow.

Again, who ever heard before that "many gardeners never use soil which has not been charred or frozen?" or that "scales are chiefly appendages of *Camellias*?" Or—but we can occupy our space no further; and will only add that we shall be glad to see Miss Maling again in print when she has some more novelties to communicate on the combination of colours and arrangement of flowers; for on those topics she is an authority.

STYLIDIUM AMÆNUM.

THIS introduction to our gardens from the Swan River colony, has been raised by Messrs. Henderson & Co., of the Pine Apple Nursery, and was, we believe, collected by Mr. Drummond, who sent over so many of the fine plants of that country which now ornament our greenhouses and conservatories. The *Stylidium amœnum*, without the gaiety of many New Holland shrubs, is decidedly pretty, and must be a desirable addition to this class of plants. It blooms in June. The *Stylidium nudum* of Lindley is now considered to be synonymous.

It is a herb—perennial, we believe—having at the surface of the soil a rosulate tuft of leaves, which are spatulate, $2\frac{1}{2}$ to 3 inches long, tapering to the base, shortly acute at the apex, and terminating in an apiculus; they are paler on the lower than on the upper surface, and have a broken cellular hyaline, scarcely denticulate, margin; when fresh they are scattered with transparent dots; the veins are dichotomous, scarcely anastomosing. From the centre of this tuft rises the erect scape, 6 inches high, terminating in the upper half in a pyramidal many-flowered raceme, below which is a whorl of linear-pointed bracts. The rachis, pedicels, and calyx are furnished with hairs tipped by black glands. The flowers are large, rose-coloured, measuring five-eighths of an inch in diameter. The pedicels are shorter than the calyx, subtended by small lance-shaped bracteoles. The calyx, besides its gland-tipped hairs, is marked with red dots and streaks; its teeth are linear-oblong obtuse, those of the lower lip three in number, narrower than the two forming the upper lip, all being shorter than the ovary. The

corolla is three times as long as the calyx-teeth; the upper lip consists of four oblong blunt, spreading lobes, the lower is very small, with a gland-like deltoid prominence at the base; a pair of short lateral ears, or projections, which become very indistinct in the dried state, and a subulate petal-like point; the throat is furnished with a crown of six clavate processes. The column is flattened at the base, becomes tapered upwards, and is bent twice in the usual way.

The *Stylidiids* should be grown in sandy soil with a preponderance of peat earth, and require to be very carefully drained, for though they like a good supply of water while growing, they cannot endure stagnant moisture. A warm, dry, and airy greenhouse is the best situation for them. Many of them are very pretty, indeed showy plants; and, in all, the structure of the flower, and the irritability of its column, are so curious, that they have good claim to the small space they occupy.—(M., in *Garden Companion*.)



TANNER'S BARK FOR STRAWBERRY-BEDS.

ALLOW me to relate in corroboration of a statement made by a gentleman to Mr. Fish (see page 422), concerning the use of tanner's bark for surrounding Strawberries when fruiting, that I happened to visit the Viceregal gardens the other day, and when passing along a walk with Mr. Smith I observed his men throwing wet fresh bark between the lines of Strawberries. I inquired, "Will it not give an unpleasant flavour to the fruit?" "Not in the least," he replied; "I have used it for

that purpose for several years. The first shower," he added, "washes the tannin and finer particles down. Slugs, too," he remarked, "do not like to travel amongst it, and I much prefer it to anything else that I have tried."

It has just struck me that where cocoa-nut fibre can be obtained at a reasonable price it would be an excellent thing for the same purpose.—D. PRESSLY, *Knockmaroon, near Dublin.*

THE ROYAL HORTICULTURAL SOCIETY.

Is Sir C. W. Dilke authorised to represent the Council of the Royal Horticultural Society, and do the rest of its members do too to him? I ask this because of the following circumstance, for the correctness of which I appeal to the parties mentioned:—

Previously to the issuing of the schedules of prizes this year, I hear that Sir C. W. Dilke solicited an interview with Mr. Marnock at Kensington, to which Mr. Marnock replied that if Sir Charles wished to see him he would be happy to receive him at the Regent's Park. I hear also that the interview took place, and that Sir Charles then proposed that they should arrange to cut down the prizes offered exactly one-half, making twenty-pound prizes £10; ten, £5, and so on; that Sir Charles considered that the Crystal Palace was a commercial concern, and not to be taken notice of, although I believe, in some circuitous way, the same reduction was suggested to Mr. Bowley. I hear further that Mr. Marnock, with a correct sense of what is for the interests of the Society and is due to the exhibitors, told Sir Charles that he would certainly bring the proposal before the Council of the Royal Botanic Society, but that he entirely differed from him, and that he thought some of the classes had prizes not large enough; and so the interview ended.

Now, I ask, is not this just the sort of proceeding that destroyed the Royal Horticultural Society before? Or did the Council sanction the proposition, and authorise Sir Charles to arrange, if he could, a reduction of prizes?—AN INQUIRER.

[We have no relative information on the subject; but we do know that if the Council of any Society allows one of its members to become dictator, no one fitting to belong to that Council will remain. It is equally certain that if the Council of any society enrolled for the promotion of an art or science, and, finding its expenditure excessive, begins retrenchment by diminishing its outlay on legitimate objects, and yet continues its outlay on objects not within its charter, that Council are derelict of duty, and pursue a course which sooner or later will be the Society's ruin.

There certainly are rumours afloat that the expenditure on the Kensington and Chiswick Gardens is to be very largely reduced, and if so, that is not the direction towards which one would have thought a horticultural society would have directed its economy. But having no specific information we refrain from commentary.—EDS. J. OF H.]

THE FLORAL DECORATIONS AT THE CIVIC ENTERTAINMENT.

THE gorgeous display of flowers that adorned the Guildhall on the occasion of the civic entertainment to their Royal Highnesses the Prince and Princess of Wales, was furnished, we understand, by Mr. B. S. Williams, of Holloway. It is but due to Mr. Williams that the fact should be recorded, for we have been asked on many occasions since who it was to whom the credit was due of having supplied so admirable a collection of plants. On application to Mr. Williams we have been furnished with a list of the plants of which the collection was composed; and those acquainted with their beauty and value will at once be enabled to form some conception of the effect that was produced.

ORCHIDS.—*Vanda suavis*, 5 feet high, tricolor, insignis; *Saccolabium guttatum*; *Ærides Larpentæ*, affine, odoratum purpureum; *Cattleya Mossiæ*, *Warnerii*; *Lælia purpurata*; *Phalanopsis grandiflora*, *amabilis*; *Cypripedium Veitchi*, *barbatum superbum*; *Calanthe masuca*.

FERNS.—*Dicksonia antarctica*; *Alsophila australis* in the most luxuriant health, *aculeata*, *radens*; *Gleichenia dicarpa*, *heciostophylla*; *Cibotium Schiedei*, *princeps*; *Cyathea elegans*; *Adiantums*, a number of kinds, among them were the Gold variety lately introduced; *Gymnogrammas*, the Gold and Silver, also the tasselled sulphur variety.

FINE-FOLLAGED PLANTS.—*Chamærops excelsa*, *Cordylina in-*

divisa, *Dracæna indivisa*, *Cyanophyllum magnificum*, *Alocasia metallica*, *A. Lowii*, *Cycas revoluta* (splendid specimen), *Dion edule* (magnificent plant, 14 feet through), *Dracæna Draco Børhavei* (the finest in the country, very rare), *Rhopala corcovadensis*, *R. magnifica*, *Stadmannia Jonghii*, *Theophrasta imperialis*, *Tupidanthus calypttratus*, *Agave filifera*, *Yucca aloifolia variegata*, *Pandanus elegantissimus*, *P. javanicus*, *Thrinax elegans*, *Aralia Sieboldii variegata*, *Ananassa sativa variegata* (several fine specimens), *Azaleas* (fine specimens), *Cheloni*, *Exquisite*, *Gledstanesii*, *Glory of Sunning Hill*, *Juliana*, *Extraneæ*, *Eulalie Van Geert*, *Gledstanesii formosa*, *Lateritia*; a monster *Erica Cavendishii* in a large tub. Specimen *Roses*, &c., were kindly lent for the occasion by Mr. W. Paul of the nurseries, Waltham Cross.

Mr. Williams had also the honour of having supplied the bouquet for Her Royal Highness the Princess of Wales.

ADMITTING AIR NEAR SMOKY TOWNS.

ON reading a lady's inquiries on the above subject I thought a little of my own experience would not be out of place in the Journal. I am close to a large town which contains about forty thousand inhabitants. On the east of me there is nothing but factories and houses, and only the breadth of two fields in front; on the west and north I am free from both, but have *Ashton Moss*, which a short time ago was a swamp. There are two large cotton mills within 300 yards of my place, and they have not much less than 300-horse power of engines, with the requisite number of boilers, giving me more smoke than I can well reconcile myself to.

I have, therefore, adopted the following plan to prevent the smoke from passing into the houses. Over the ventilators I have put a screen made of Shaw's tiffany, and find that it "riddles" the soot from the air as the latter passes through—that is, the air in reality passes through a sieve. I find that it answers very well, for the tiffany is made as black as soot in a short time, the soot adhering to it instead of going into the house. As soon as my hands are not so much employed as at present I shall have a little more to say on airing in smoky places.—JOHN HAGUE, *Groby Lodge, Ashton-under-Lyne.*

ROYAL HORTICULTURAL SOCIETY.

JUNE 17TH.

FLORAL COMMITTEE.—At the second great Exhibition, this day, the subjects brought before the Sub-Committees were of a very interesting character. The new plants on this occasion were more numerous than the florists' flowers, and though many beautiful specimens of the latter were exhibited, but few received awards. We shall notice them as they presented themselves.

Mr. Mills introduced a new bedding *Verbena*, *Othello*, a dark puce or claret, dwarf habit, compact trusses, and very free-flowering. This is likely to prove a very useful bedding variety, and was commended.

Mr. E. J. Lowe sent a very good stand of seedling *Pansies*. Among them a promising *Fancy* variety, *Pallas*, violet back petals, dark eye on yellow ground, lower petal very dark, singularly belted with violet. This will probably become a useful flower. Commended.

Messrs. Smith, Dulwich, had a seedling *Fuchsia*, *Pillar of Gold*, a distinct golden variegated form of this plant, and was commended for its foliage.

Mr. Williams, Holloway, had *Amaryllis Perfecta marginata*, a distinct and good variety of the numerous seedlings of this class. Its form and peculiar white markings or stripes on a dull red ground rendered the flower attractive, and was awarded a first-class certificate.

Mr. Hally, Blackheath, sent *Pelargonium Adonis*, a zonal which had been grown in 1862 in the gardens at Chiswick, where it was much admired and classed among the best varieties for its beautiful darkly-zoned foliage, bright orange scarlet flowers, and conspicuous white eye. It now received a first-class certificate.

Messrs. E. G. Henderson, had a collection of hybrid *Mimulus* of the same character and colour as those exhibited by Mr. Bull earlier in the season. Commended.

Mr. Turner exhibited *Petunia* Mrs. Sherbrook, a fine decorative variety resembling Mrs. Ferguson, but of the large pentangular form of the old variety *Prince Albert*. Should the

flowers prove constant in their colour and markings, it will be very useful. Commended.

Mr. Watson, St. Albans, showed *Calceolaria Bijou*, a decided acquisition among the dark bedding varieties; dark rich crimson flowers, dwarf habit, and free-flowering. Second-class certificate.

Mr. Bragg, Slough, had a collection of seedling Fancy Pansies. Though late in the season for this flower, the three varieties—Bob Ridley, Harlequin, and Dazzle—received a label of commendation.

Mr. Turner sent several seedling *Pelargoniums*. *Achilles* (Hoyle), a very splendid and brilliant flower, back petals deep maroon, margined with bright carmine, clear white centre, lower petals painted with rosy crimson, first-class certificate; *Pelargonium Aristides* (Hoyle), dark back petals, white centre, lower petals shaded with light rosy lines—though a small flower, perfect in form and substance, second-class certificate; *Pelargonium Maid of Honour* (Beck), an improvement on *Viola*; rather too coarse, but distinct in shading of colour, commended.

Among the plants submitted to the Sub-Committee we noticed the following:—

Mr. Standish, Ascot, *Deutzia crenata rubra*, from Japan, a double variety of this beautiful class of very handsome shrubs, said to be hardy, and which will, doubtless, be much sought after—first-class certificate.

Messrs. Veitch exhibited *Rhynchospermum jasminoides variegatum*, commended; *Homœanthus viscosus*, with double light blue flowers resembling the Cape Aster, commended; *Lastrea erythrosora*, a very handsome Fern, second-class certificate; *Woodwardia japonica*, a Fern already exhibited by Mr. Standish, but never in such good condition, second-class certificate; *Andromeda* species, California, a very conspicuous shrub with erect spikes of white flowers showing themselves above the dark green box-like foliage, commended; *Pancratium* species, from Philippine Islands, with large heads of white flowers, a very showy plant, first-class certificate; *Lomaria* species, from the Philippine Islands, commended; *Alsophila Tanitis denticulata*, a very handsome Fern, second-class certificate; *Selliguea pothifolia*, a Fern from the Philippine Islands, second-class certificate; *Marattia Cooperi*, first-class certificate; *Pinanga*, species nova, Philippine Islands, commended.

Messrs. Fisher, Holmes & Co., exhibited *Abies* species, North America, which was commended; and *Taxus fastigiata*, with golden-coloured shoots, first-class certificate; *Cypripedium Stonei*, from Mr. Williams, of Holloway, received a first-class certificate.

Mr. Bull had *Cineraria argentea*, which may prove useful as a plant for edging, commended; *Trichomanes crispum rufum*, a very distinct variety with long, narrow fronds, second-class certificate.

FRUIT COMMITTEE.—Two seedling Pines of considerable merit came from Mr. Stevenson, gardener to the Earl of Durham at Lambton Castle, but neither of them was superior to existing varieties. Mr. Thomson, of Dalkeith, sent a splendid bunch of his seedling Grape *Duchess of Buccleuch*, which received a first-class certificate.

HAS THE CLIMATE OF ENGLAND CHANGED?

THE opinion upon this question given by me a few years ago in *THE COTTAGE GARDENER* entirely agrees with the remarks of the *Mark Lane Express*, quoted in *THE JOURNAL OF HORTICULTURE* of June 9th; and while endorsing all that is advanced in that excellent agricultural adviser I will add a few additional remarks deduced from experience, having kept a table of the temperature since 1805.

The vulgar error that the climate has undergone a great alteration during this present century is owing to our severe winters and very hot summers coming so few and far between.

A middle-aged man recollects the severe winter of 1813–14, when the snow lay on the ground in England for thirteen weeks, and 1838 was equally severe; the only difference was the fall of snow. The most intense cold in the present century was the winter of 1859–60, when the thermometer was 7° below zero several days, and yet the young people keep saying that our winters are much milder and summers much colder.

If these persons would take the trouble to examine the oldest and best chronologies and registers of the seasons contained in Mr. White's "History of Selbourne," Mr. Whistecroft's writ-

ings, and almanacs, it would be found that in a term of thirty years at any time during the last hundred years there is no perceptible difference in our climate whatever; we are now going through a series of indifferent or medium seasons after a series of much better seasons—such as 1854, 1855, 1856, 1857, 1858, 1859, the last three remarkable for the mildness of their previous winters and the intense heat of their summers, particularly the whole of July, 1859.

Through our insular situation in England no regular theory can be established; and from long experience I find the best guide, and that a very uncertain one, is the history of the summers gone by, as, in a cycle of forty years, the balances of cold and hot summers, severe and open winters, wet and dry seasons, become pretty nearly equalised in that period.

I have noted during the present century that by far the majority of the hottest summers are preceded by the mildest winters; and agree with that excellent naturalist, Mr. White, of Selbourne, that the majority of severe winters are preceded by wet summers.

I have also noted that we seldom have two very severe winters consecutively, nor two "ultra" hot summers; respecting wet summers, often two wet ones come together, but rarely three so wet as 1860, 1861, and 1862 consecutively.

I shall merely repeat my strong conviction that no change has taken place in the climate of England during the present century, save and except those variations arising from the peculiar insular situation of the British Isles, which extraordinary variations always have existed and will continue to the end of time.—H. W. NEWMAN, *Hillside, Cheltenham*.

ANNUAL REPOTTING OF FRUIT TREES.

IN No. 114 of *Journal*, your correspondent, "W. H.," gives the practice of his gardener in the annual repotting of his fruit trees. From longer experience than that of any other orchard-house cultivator, I with confidence state that this troublesome practice is quite unnecessary. To prove this I will in few words give my practice. In 1849 I potted the first orchard-house trees in 11-inch pots, they remained in those pots from four to five years, the earth from the surface being annually taken out to the depth of 4 or 5 inches, and replaced with a rich compost of loam and manure. The trees flourished and bore fine crops of fruit.

They were then repotted into 13-inch pots, in which they remained from four to five years under the same treatment. The most vigorous-growing trees were then potted into 15 and 18-inch pots still under the same treatment—the latter size I reckon the ultimatum, for I can plainly see that with annual top-dressings and annual pinching and pruning, they will continue in health and fertility as long as human wishes can extend.

Your correspondent's failure in Apricot-culture may be traced to the too great disturbance of their roots. Some years since I, from forgetfulness and ignorance of the consequences, had my Apricot trees, then in full bearing, top-dressed in February, taking out the surface soil and replacing it as I now do in autumn. The trees blossomed beautifully, but to my great surprise did not set a fruit. I was much chagrined, and for some time could not account for it, till at last I reflected that the roots being thus recently disturbed had not got into action; the young fruit required food and found none. I have ever since profited by the lesson, and my Apricot trees are the first to be top-dressed in October.

Apricot trees in pots require the soil to be very firm. The failures I have observed have been owing to the soil used being too light and friable, and not rammed down firmly enough when placed in the pots as top-dressing. The soil used here is a brown tenacious loam inclining to clay, which, like all the loams and even the sands in this district, abounds in comminuted chalk, the washings or denudation of what once were, I presume, chalk mountains to the north-west of this place. This loam settles down so firmly in the pots that in the autumn it is as hard as a well-trodden path. To show the favourable nature of a firm dry soil to Apricot trees in pots, I must give a case. Last winter I observed some forty or fifty standard and half-standard trees, which were potted in March, 1862, to have small heads scarcely large enough for sale, but every shoot full of blossom-buds. They had been under glass all the summer. I had water withheld from them till towards the end of February, when the blossom-buds were beginning to swell, so that the earth, not having had any water for nearly five months, was remarkably hard and dry as dust.

Shortly after water had been given at intervals of a day or two so as to gradually saturate the mass of dry earth, the buds commenced to swell, and the trees blossomed in April most vigorously. In May, as soon as the fruit was fully set and about the size of horse beans, the surface of the soil in the pots was stirred and removed to barely 1 inch in depth, taking care not to lacerate the surface-roots. The usual summer surface-dressing was then placed on the surface of the earth in each pot 3 inches or so deep, so as to lie above the rim of the pot and forming a shallow basin with the stem of the tree for its centre. This prevents the water running off. Out of about fifty Apricot trees treated as I have described, upwards of forty are crowded with fruit. It seemed, indeed, as if every blossom had set, so that the thinning of the fruit was tiresome.

The requisites for successful Apricot-cultivation in pots are, according to my experience—1, a firm tenacious soil disturbed annually as little as possible, for in giving my trees their fresh surface soil in October, the exhausted soil is not taken out more than from 2 to 3 inches in depth; whereas with other trees from 5 to 6 inches is not too deep; 2, rich surface-dressings in spring and summer—say three separate dressings in May, June, and July, the first week in each month.

The value of these surface-dressings can scarcely be estimated, they are far preferable to liquid manure. I have tried all the artificial manures mixed with different substances so as to form a proper medium for surface-dressing, and have come to the conclusion that none of them approach in efficacy that which can be made at home—viz., horse-droppings from the roads, or half-decomposed manure chopped so as to be equally convenient in mixing, and kiln-dust from the maltings, equal quantities, the mixture thoroughly saturated with strong liquid manure before it is used. Care must be taken not to lay it in a large heap, for fermentation is so violent as to injure the compost. In default of kiln-dust (here our atmosphere is eminently malty and our people, I fear, too beery, from the number of malthouses), the manure or horse-droppings may be used without the dust, only they should be well saturated with strong manure water.

I have been induced to trouble you with this long array of words on a very simple subject, because I saw that your correspondent's gardener, as described in page 399, might lead your numerous readers to think the annual repotting of fruit trees necessary, and others to look at their culture with "fear and trembling." Just imagine the labour of annually repotting a well-grown fruit tree from eight to twelve years old: one might as well think of annually retubbing the Orange trees at Versailles. As I have advanced certain facts, I must make myself responsible, I therefore give you my name.—THOS. RIVERS.

A PLEA FOR THE BIRDS.

I HAVE two neighbours—one, like myself, a true lover and guardian of the feathered race, feeding, sheltering, and welcoming them at all seasons, and not allowing any which build their nests in our gardens to be disturbed. The other gentleman shoots and destroys them with equal pertinacity; and thus whilst his Gooseberry bushes have not a leaf left on them, ours are in full foliage; our little feathered "helps" destroying the caterpillars as soon as they make their appearance.—A. Z.

[Some months ago I wrote my opinions on this subject. The topic occasioned some controversy at the time. A correspondent from Worcester, whose communications on other subjects I have read with great interest, agreed with me, that in general these tiny garden helpers or garden pests, as they are alternately called, are much too numerous. Some provincial papers I found also took the matter up, and, as might be expected, considerable difference of opinion existed. I may, however, observe that in the neighbourhood in which I write, where plantations of Apples, Currants, Gooseberries, &c., cover many hundreds of acres, the benefit of small birds destroying caterpillars is far from being generally recognised. An extensive grower who owns something like a score acres or more of Gooseberries, and who, of course, has at times suffered severely from the caterpillar, told me not long ago, that he has shot birds of all kinds that are to be generally found in such places, and he never discovered a caterpillar in the crop of any he had cut up. As the caterpillars are often as destructive in cottage gardens situated close to a wood where there is abundance of shelter for birds, and from whence these issue forth in scores to attack the Peas, seed-beds, fruit, &c., it is far from certain yet that the birds destroy

caterpillars, or, if so, it may only be when there is a lack of other and more agreeable food. Observe, I by no means say they do not eat caterpillars; but as I never saw them do so, although I have seen them busy enough with other things, it is not asking anything unreasonable to request those who have done so to inform us what kinds we are to regard as friends in this matter. In giving opinions of this kind, we ought to lay aside our predilections for or against the object in view, which is more difficult to do than most will acknowledge. That small birds play an important and useful part in the economy of nature cannot be denied; but do not wasps, snakes, rats, and other things also form a useful part of the whole? and yet we are very unwilling to give them credit for anything but mischief or destruction. I am not certain but that the last-named of the three are the best sanitary agents we have, cleaning away the refuse of drains and sewers, that might be pestilential without them, and yet they are persecuted to the verge of annihilation. As I gave my opinion at length at the time mentioned, I have little to add now beyond the fact, that although I have never yet seen birds pick off caterpillars from Gooseberry bushes, I am willing to believe they have done so, but would like better to be told by some one who had seen them, than take it for granted that as the caterpillars all disappear at a certain time, it must be the birds that have devoured them. If a discussion arise on this subject, I would take the place of a neutral. Give evidence in favour of the little warblers, I cannot; to condemn them on the plea of their non-utility, I am unwilling, if evidence be forthcoming that they really do destroy the enemy complained of; but such evidence to be received ought to be that of an eyewitness, not the opinion of an advocate. Without this proof, I fear I must hold by the opinion expressed in my former article—that, owing to the reasons there given, small birds are much too numerous at the present day.—J. ROBSON.]

CATERPILLARS—THE BEST WAY TO DESTROY THEM.

My object in writing to you is to make known to the lovers of the Gooseberry the method I have this year adopted for, I trust, effectually overcoming the enemy. It is founded on the maxim of old Ovid, who was an acute observer of nature as well as a distinguished poet.

"Principiis obsta. Sero medicina paratur
Cum mala per longas convalere moras;"

which I translate for the benefit of mere English readers—"Meet the very beginnings; medicine (Hellebore, &c.), is provided too late when the disease has gained strength by long delay."

But first let me describe how the caterpillars get upon the bushes. I have observed two kinds—first, a light green one, which is counted by units, while another, also green but dotted over with numerous black spots, is counted by hundreds. The latter is the production of a small fly, which may be seen flying about the bushes in the first warm days of May—that is the time hereabouts, but it may be earlier in the south. This fly is the *Nematus grossulariæ*, and belongs to the order of insects which have four membranous wings, named Hymenoptera, and to that class of them called Tenthredinetsæ, or Saw-flies, from the female possessing a saw-like ovipositor in the end of the abdomen. With this she makes a series of small holes along the veins on the under side of the leaves of the Gooseberry and Currant, into each of which an egg is discharged, and along with it a drop of frothy liquid, which covers it up. The punctures thus made become more and more convex as the eggs increase in size, and on turning up the leaves, they may be seen like strings of small white beads; generally from twenty to fifty eggs are deposited on one leaf. This is the first of the four stages of metamorphosis which all insects of this kind undergo. The next is that of the larva or caterpillar. In a few days, according to the warmth of the weather, the eggs are hatched, and the juveniles immediately begin to gnaw the leaves; the period of their rivification is known by a series of small holes seen on the upper side of the leaf as if pierced with a pin. At first they keep together on the leaf on which they were hatched; but when that is devoured all to the veins, they creep upwards to the adjoining leaves, and finally spread over the whole bush, quickly increasing in size, for they are very voracious. After a while they moult, or shed their skins several times, and then crawl down and hide themselves in the earth. There they attain the third state of their existence, called a pupa or babe,

because it is bound up in a hard skin, somewhat resembling a child trussed up like a mummy, according to the barbarous fashion once prevalent in this country, and still retained in many parts of the world. In some insects the pupa assumes a golden colour, and is, therefore, called a chrysalis. In this third state the animal remains till the following spring. It eats no food, is incapable of locomotion, and, if opened, appears filled with a watery fluid, in which no organs can be traced; but that gradually assumes consistency, and on the approach of the vernal heat, the enclosed insect, now completely formed, bursts its case, and enters on its fourth and last stage called imago, being a true representative or image of its species.

I shall now describe my process of extermination. In former years I had tried several modes, especially handpicking; but not having begun till the caterpillars were spreading over the bushes, I never could completely destroy them. This year, being resolved to attack the enemy in their first entrenchments, I had been carefully watching their approach from the beginning of May, when the weather suddenly grew warmer, the greatest heat in the shade on April 30th being 58°, and on the next two days 69°. It was not, however, till the afternoon of Saturday the 23rd that I discovered on some of the bushes a few perforated leaves. The fly, guided by its natural instinct to seek a sheltered abode for its future offspring, almost invariably deposits its eggs on the lower leaves of the bushes. Some have supposed that if in pruning them you cut away all the low shoots there will be no caterpillars. This is a mistake; for if the bushes have no leaves near the ground the flies will go higher up, still keeping to the lowermost. In those bushes which are clothed with leaves from the ground I have hardly ever seen any eggs above one-third up.

There are seventy-two Gooseberry bushes in my garden. Having secured two lady volunteers to assist me in the attack, I allotted to each of them one-fourth of the number, and took the other two under my own charge. We commenced operations on Monday the 25th of May. By a careful reconnoitring it is easy to discover the haunts of the enemy in the perforated leaves where the newly-hatched animals have commenced their work. Wherever such leaf is found the operator will by turning up a few of the adjacent leaves, almost invariably find three or four of them covered on the under side with the bead-like eggs, all the produce, doubtless, of one fly. All these should be plucked off into a small flower-pot or other vessel, and afterwards carefully burned. I recommend plucking off on bushes which are thickly clothed with leaves, as tending to give more air and light to the fruit; but on bushes which are thinly clad, it may be preferable to retain the leaves and squeeze the eggs with the thumb. On the first two days I destroyed in my department, on a fair calculation, about 10,000 of the enemy, which gave on an average, about 280 to each bush. Had these incipient larvæ and eggs been allowed to come to maturity (for almost every egg will come into life), they would within a week or so have spread over the bushes, and if molested, would soon have devoured the leaves. By timely vigilance this has been prevented. But it must not be supposed the work was done; for all the pupæ do not burst their covering at once, and therefore the flies continue the work of depositing for a short time, though in smaller numbers than at first. Allowing an interval of one day, I examined the bushes again, and found a few stray leaves with the young vermin or eggs on them, and every second day I have picked a few; but it is an easy work now to keep them under, as they have never been allowed to enlarge in size or migrate from their original positions except in a very few cases. This day (June 4th) I did not find on an average above two leaves on each bush that required excision. The labour is therefore now very small; in fact, a sort of recreation to any lover of gardening; but it must be kept up for a short time longer—that is, till all the flies are hatched, which will probably be in about a fortnight. This mode of destroying the caterpillars is, in my opinion, far preferable to washing or sprinkling with hellebore or any other substance; for it is more effectual in destroying the enemy, and less injurious to the bushes. Though hellebore—now the fashionable remedy—may kill or stupefy the animals, it is impossible to apply it to every leaf, and a good many will be devoured after all, which will injure the quality of the fruit; whereas by my method of picking off or bruising the eggs and infantile larvæ, no material damage is done to the bushes. All mine look as healthy and fresh as if there had not been a tenthred in existence.

Before concluding, one word on the destruction of those

little animals which are so injurious to our Roses, the *Aphis roseæ*, commonly called "green fly," but more properly plant lice, for they are apterous or without wings. They infest the tender shoots, and multiply very rapidly. Tobacco juice and tobacco smoke are used for destroying them; but the most effectual mode, I think, is that which I have practised for some years. An assistant holds a small basin or deep plate with some water in it under the infested shoot. I hold that steadily in a horizontal position over the water with one hand, and with the other brush the aphides into it with an old shaving-brush. This takes a little time, but is very effectual.—J. T., *Coupar-Angus*.

THE COTONEASTER MICROPHYLLA.

THE accommodating nature of some plants, and their adaptability to ornament, in widely different situations and positions, render them to a certain extent very great favourites for this distinctive character. And I believe the *Cotoneaster microphylla* in this respect will bear a favourable comparison with almost any plant in common use, although, when left to itself, it only develops a very uninviting, straggling, and careless habit, more or less recumbent, and is as if of no importance; but when seen under the hand of the skilful and accomplished cultivator, many varied and endless contrivances have rendered many an insignificant plant, when brought under cultivation, objects of great adaptability, useful, and ornamental beauty. The *Cotoneaster microphylla* may well be classed among the plants which cultivation has rendered both useful and ornamental; by way of illustration I will just notice a few of the situations which I have seen this slender and helpless-like plant occupying, and worthily filling as an ornamental plant. I have seen it planted on steep declivities, growing and rambling about there, upon and amongst rocks and large stones, and keeping such situations from becoming bare and naked during a large portion of the year, while all deciduous plants appear more or less like mere skeletons of what they are in summer; its dark foliage and bright berries giving a pleasing relief in the dullest season. On the bank or rockery in the home grounds of an estate occupying some sheltered nook or rock fernery, this plant, from its recumbent habit, is most suitable and useful, as it will grow pretty well under a good deal of shade. I have seen it overhanging bare rocks for 6 or 7 yards, where perhaps scarcely anything else would grow downwards. I have seen it occupying the outside corners of the walls of gardens, where it made a very creditable appearance, being nailed firmly against the wall, and there standing the "battle and the breeze" far better than almost any other plant which I know, and perhaps for this reason, that its hardy habit and very small leaves render it very difficult for even a regular north-eastern wind to lacerate or take off.

I know some cottages where it is very neatly trained all up their front, and that too in rather exposed situations. I know two cottages occupied by labouring men; they are built with a very rough rubbly stone; they consist, as is often the case in England, of four rooms each; two on the ground floor, and two bedrooms each, between the doors is planted a *Cotoneaster microphylla*, which runs up and very nearly covers all the front of both these cottages, after passing over the door of each. Many admire it—they stand close to the side of a road much frequented, and many give them a pleasing look and much admire this plant, both while in flower, and especially during the dull winter months, while it remains studded all over with its reddish berries.

I know an entrance lodge to a gentleman's residence, situated in a narrow glen, amongst plantations by the roadside. It is a thatched cottage, having a projecting porch or doorway entrance. A plant of the *Cotoneaster microphylla* grows against this porchway and quite overtops it, rambling all over it, at least it is not kept neatly nailed in, as in the case of the two cottages; only whenever any strong branch appears to get the mastery, or grows too much away from the building, then this is cut away. I think I never saw anything more appropriate for such a situation. Those acquainted with its habits will soon understand its merits for ornamenting the front of a cottage in entrance to a drive through a plantation.

The last, which I will at present notice, is not one to be recommended; however, from its oddity I will just mention it. A greenhouse standing in the pleasure ground of a suburban residence, which I know very well, has at one end a plant of this *Cotoneaster* planted against it, and trained along against the

side of the front beam where the roof starts from, and at each rafter a branch of the Cotoneaster is trained up upon the rafter between the lights. Whether so training plants be recommended or not, I will not say; yet few plants are more suitable even for such fancy work than this Cotoneaster is.—(G. DAWSON, in *Scottish Gardener*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE late heavy rains have done invaluable service in this department. Crops that a short time ago were languishing for want of moisture are refreshed, and have an appearance which, as contrasted with that which they bore some time back, is quite delightful. *Broccoli*, let there be no delay in getting out a good breadth of White and Purple Cape and Grange's Early White, which, if true, is invaluable in late autumn. *Cauliflowers*, some of the late sowings to be planted out. Break down a few leaves over the heads of the most forward. *Cucumbers*, the plants on the ridges will be benefited by being mulched with short grass or litter of any kind. *Endive*, a full sowing may now be made for the main crop; and if any were sown in May they had better be thinned-out, and the thinnings transplanted. The Small Green-curbed is the hardest for winter use; but for the autumn crop the Large Green-curbed is the best, planted in very rich soil at 2 feet apart. The large-leaved Batavian is also a useful variety. Where *Chicory* is in request for salads now is the proper time to sow it. *Dwarf Kidney Beans*, thin and earth-up, stop advancing crops, and sow the latest successional crops. *Herbs*, take the first opportunity as soon as they are sufficiently advanced to cut a portion for drying; the best time is as soon as the blossoms are expanded, because they then contain most of the aromatic principle; to be cut when perfectly dry, and to be dried quickly in the shade. *Lettuce*, tie-up for blanching, and make successional sowings; the same of Radishes and other salads. *Scarlet Runners*, make the last sowing, and give those advancing a little assistance in training them up the stakes. *Vegetable Marrows*, mulch as recommended for Cucumbers; peg-down the bines as they advance, and attend to stopping. Trench-up and fill with Broccoli, Winter Greens, and such kinds of crops, every space as the early crops go off; not one vacant space or corner should now be left uncropped.

FLOWER GARDEN.

The weather has of late been all that could be desired, and the rain has fallen so copiously as to put a stop, for a time at least, to the laborious operation of watering. Plants in masses that have been pegged-down are growing rapidly, and the Verbenas are throwing-out strong healthy roots from the stem, thus showing the advantage of the system of pegging-down, as the closer we can get all plants in masses to the surface of the ground the more certain shall we be of success; for from their proximity to the soil a more robust and rapid growth is secured. Advantage should be taken of the present showery weather to fill up all the empty beds, also to plant-out German Asters, Ten-week Stocks, Marigolds, and other annuals, to fill up all the empty spaces in the flower-borders. Reduce occasionally some of the blossoms in the bud state on some of the very free-flowering Perpetual Roses. It will cause them to keep longer in bloom. Let gross shoots on Fancy Roses be pinched when a few eyes long, after the manner of fruit trees. Sow Brompton and Queen Stocks for spring-flowering, selecting for them a bit of light rich soil, and never letting the surface become dry until the plants are well above ground, for there is no time to be lost if these are wanted strong for blooming next May. Young shoots of Pansies will root freely under a hand-glass in a shady situation, and if planted-out in a rich soil in a shady corner will grow rapidly during the autumn, and may be transplanted into the flower-garden when the frost cuts off its present occupants. See that sufficiently strong stakes are applied to plants with heavy foliage and gross habits—such as Dahlias, Hollyhocks, Larkspurs, Phloxes, and tall-growing Asters. Let Carnations and Picotees be layered as soon as the shoots are in a proper state for that purpose. Pinks may be piped or struck from cuttings. There is little art in this operation, as, if kept moderately moist in a shady situation, they will soon strike root.

FRUIT GARDEN.

The season being now what is called a very growing one, there is a necessity for increased diligence in keeping all young wood properly nailed to the walls to guard against the effects

of high winds. Gooseberries and Currants trained against north walls to have their leaders nailed-in, and all the side offshoots spurred-in to within a few joints of the base. Peaches, Nectarines, and, indeed, wall trees in general, will be greatly benefited by occasionally giving them strong syringings, whether infested with aphides or not, because, independent of washing away all filth, this proceeding disturbs and drives-out woodlice, earwigs, and other vermin. Continue the thinning of Grapes, and keep the growth judiciously stopped. Black fly is sometimes very troublesome on the late Cherry trees at this season; it is, however, easily got rid of by dipping the ends of the shoots in tobacco water, giving the trees a good washing with the engine next morning.

GREENHOUSE AND CONSERVATORY.

Give every possible attention to plants for autumn and early-winter blooming, as *Lilium lancifolium*, *Chrysanthemums*, *Salvia splendens*, *Globe Amaranths*, tree Carnations, *Scarlet Geraniums*, *Heliotropes*, *Cinerarias*, &c. Let them have plenty of pot-room, good rich compost, a moist atmosphere, and plenty of space for the perfect development of their foliage. The *Epacris*, the winter-blooming *Ericas*, and the *Cytisus* should not be overlooked. Most of the finer kinds of hardwooded plants will now be out of bloom, and, consequently, due attention should be paid to starting them for another season. Some will require cutting-in rather closely, and, indeed, as long straggling plants are at a discount now, the knife should be used freely wherever and on whatever it is found necessary. See that large specimens of *Camellias* are not allowed to be too dry at the root after they have set their buds, for the shedding of the latter is often due to this cause. Attention to be paid to plants in borders, for while in active growth they require a good deal of water. Contributions from the stove should still assist the ordinary stock in maintaining the gaiety of the conservatory. The removal of some of the larger specimens from the stove, such as large *Clerodendrons*, *Ixoras*, *Stephanotis*, *Plumbagos*, *Gardenias*, *Jasminums*, &c., will afford much useful space for the young and delicate portion of the stock which should now be shifted and otherwise encouraged.

STOVE.

Many of the basket Orchids will soon be protruding their roots through the moss or soil, and a little additional fibrous peat or moss should be added in due time. The prevailing dull weather will render the use of the syringe less frequently necessary. Atmospheric humidity may be sustained by frequently damping the house. If the regular and continuous admission of air can be managed, however small the amount, it will be found useful.

PITS AND FRAMES.

These will require abundance of air and careful watering daily. Some of the delicate stock will, during bright sunshine, require shading, especially where unplunged. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

STAKED Peas in dry days. Gave manure-waterings to large Cauliflowers. Threw some salt among Asparagus-beds, and will give some mulching as soon as we can get it. Removed all seed-heads from Sea-kale, except what will be wanted for seed. Mulched Globe Artichokes, these being much in demand. Thinned Onions, Parsnips, and Carrots finally for the main crops. Find the Early Dutch Carrot useful for early work, as it comes in so well for dishes and stews. It is a little round thing about 1½ inch long, and now in a slight hotbed pretty well 1 inch in diameter, and from a yard square numerous dishes can be obtained, if there is little thinning, and the best are drawn first. Peas being very heavily loaded, owing, we presume, to the dry, sunny weather before the rain, gave them a watering at the bottom with weak manure water. Planted-out strong plants of Celery, three rows in a bed, in beds previously used for hardening-off bedding plants. On the ridges between such beds, in general, we have a row of moderately early Peas, and they with their sticks just give the shade that the Celery at an early period likes as naturally as a ditch plant. We could not have the Peas there on account of the necessity of walking on the ridges to attend to the bedding plants; but we have sown late Peas there, and even the staking of them will break the force of the sun's rays; in the meantime, if the sun should be very fierce, we will lay pea-stakes across the beds to diminish its force.

We consider this slight shade of much importance to early Celery, and if among the sticks used for Pea-sticking, or for laying across the beds, there should be a portion of spruce fir, there will be less likelihood of the fly meddling with the plants. We find the same thing with Turnips. Our sowings are always small until the autumn, as small, sweet tubers, rather than old and large ones, are our object; and in every fresh sowing of a few yards square, if we cover with hurdles that have been watled with spruce, we seldom suffer either from birds or fly. The resin in the fir seems very hateful to them. Here we may mention that we saw a large piece of ground sown with Radishes in the garden of a gentleman farmer, and scarcely a plant was to be seen, and did not the seedsman catch it behind his back for sending such seed. The birds knew what the seed was and acted accordingly. If, surrounded with large thatch buildings, we had sown Radishes without any protection, we should not have expected to have gathered a handful. Planted out the only little spare piece of ground with equal portions of Scotch Cabbaging Kale, Savoys, and Brussels Sprouts. Planted others between Potatoes, and pricked-out more in beds, to be lifted as space could be had for them, as the Peas come off. Examined Mushroom-beds, spawned a fresh piece, regulated Cucumbers, potted Capsicums, &c.; and as a mild hotbed in which we had forwarded Celery and bedding plants, and consisting chiefly of leaves, was now empty, had it turned over, placing grass and litter at the bottom, so as to throw in a little fresh heat, put soil over all, and planted with Cucumbers and Vegetable Marrows, so that if they do well they may run over the beds, and beyond them. Even for pickles we find a little bottom heat does them good.

FRUIT GARDEN.

Went over wall trees, thinning and shortening shoots. Will do so with standard Apples, Pears, and Cherries, as soon as possible. Strawberries, first watered, and then rained upon, are doing well, and coming in to succeed the last of those in orchard-house. Watered borders in the latter heavily with weak manure water, and looked after insects. Removed out of doors a few Cherry trees from which the fruit had been gathered. Watered Figs again which are planted shallow in a house, as it is hardly possible to make them too wet when the fruit is swelling, provided the moisture is not stagnant. Watered Peach-house also heavily with soot water, the fruit coming in a few at a time on the front trellis, whilst those on the back wall are still like bullets. Thinned and regulated Grapes. Those in small early pit have been most useful and abundant—pit 6 feet wide, bed for Vines about 3½ feet, hot water below and above. The plants are in the bed, and have borne too heavily for years. We have some fear that some of them have got out of the little bed, and if so, the success will not be so continuous. These have chiefly borne on the young wood. In three lights of Sweet-water, there were from fifty to sixty fair-sized bunches. Melons ripening in frames have had a little water given to the bottom through holes, leaving the surface dry. Pines will want a little shading in bright days, after dull ones, if at all near the glass. If kept cool, about 60° to 65° at night, they will stand a high temperature during the day—say from 80° to 95°, if a little air is given early.

ORNAMENTAL DEPARTMENT.

The pits being now more at liberty, from plants going out to the flower garden, have potted into larger pots varieties of Coleus, Begonias, Gesneras, &c., and given them a little bottom-heat; also Balsams, Achimenes, &c. Potted Ferns, dipped Stanhopeas in manure water, as they were getting rather dry, and the flower-buds were coming strong. Potted-off Achimenes, Gloxinias, &c., and kept them at first in the shade, with air, as the least condensed moisture on the leaves when the sun strikes the house will do them harm, and spot and mark them. Potted Geraniums for succession, Fuchsias, &c., and also Chrysanthemums for large specimens. For want of a better place, clustered most of the Azaleas at one end of the conservatory, where we can keep them closer, and give them plenty of the syringe, neither of which would answer Pelargoniums, Fuchsias, &c. We do not expect these to be so forward as those placed in a house where they can have as much moisture and heat as is necessary. The last time we saw such a house of Azaleas, belonging to one of our princes of nurserymen, every plant was glistening with moisture, as if they were covered with dew-drops; the hot-water pipes were in reality hot, and the plants were breaking and growing in a close, moist atmosphere at a temperature of from 80° to 90°. Such plants duly hardened-off by more air and less moisture,

and more sun as the shoots were made, and then still more hardened-off by greater exposure, would just be in a position for forming, resting, and then swelling and opening their flower-buds, as soon as the excitement of warmth and moisture was given to them. Such sweet plants as the Gardenias, that have been blooming in an intermediate-house, such as a warm greenhouse, just require similar treatment after pruning and cleaning, only if they should have the advantage of a mild, sweet dung-bed, or a sweet tan-bed, with a bottom-heat not above 85°, they will like it all the better than mere hot-water moist heat. Free-growing, and free-blooming Heaths, as Wilmoreana, hyemalis, linnaeoides, &c., will delight, after pruning and resting for a week, with just less moisture in the atmosphere, and less heat than the Azaleas, and more air must be admitted as soon as the young shoots are formed, or there will be danger of drawing and of mildew. Epacris will now rejoice if fairly started into growth in a cool pit, where they can be slightly shaded in bright sunshine. But as they grow more air must be given, and for part of August, and through September and October, the less obstruction that is offered to direct sunshine, the better will the wood be studded with flower-buds. All hardwooded plants after flowering require a little of these same conditions—resting, after pruning for a week or two, then a closer and a moister atmosphere to cause fresh growth, and a drier and sunny atmosphere to consolidate growth. This latter remark refers to Gompholobiums, Leschenaultias, Pimeleas, Polygalas, and New Holland hardwooded plants in general.

In growing all these plants, a slight dewing of water from the syringe, morning and afternoon, and even in the middle of the day, does more good than deluging with waterings at the roots, or even flooding the floors of the house. Many a hardwooded plant is sent to its last home from excessive waterings at the roots, when the plant is in that comparatively dormant state that the roots cannot absorb much nourishment, and, consequently, if there is the least derangement in the drainage, there can be little result but paralysis and decay. In all such cases, after trimming, and before fresh growth commences, the roots should not be dry, but they should be dry rather than wet. A slight sprinkling among the stems, and a rather close atmosphere for a few weeks, will cause the fresh growth to come away more kindly than if the roots were saturated, and when the shoots are an inch or two long, is the best time to repot or top-dress, &c., according as may be required.

For all such plants good drainage is indispensable, and freedom from worms if the plants stand on the floor of a pit, or out of doors. Even a few rough ashes are almost an equal requisite to success. This is still more important if the plant is to be plunged partly or wholly in a hotbed. Then, all precautions to the contrary, there will most likely be a few worms, and these will pass in by every opening in the plunged part of the pot however small. For all such plants that have thus to be plunged, as respects their pots, or set upon the ground, or rough ashes, we prefer pots with one good hole in the bottom to those with numbers of holes, greater and smaller in size. Then a very simple means will secure good drainage, and defy the entrance of our otherwise good friends the worms. The best means of securing this would be little convex caps of a mixture of zinc and copper to place over the holes, which with the weight above them would be so close to the pot as to let water out and yet prevent a small worm entering, and that they would soon give up attempting, as their sleek sides would receive something like a galvanic shock every time they tried it. A much simpler mode is at hand on every potting-bench, if people could be persuaded to use it. We say persuaded, for if you give ever so plain directions on the subject, you will have the pleasure in turning pots up to find that the directions have been more attended to in the breach than the observance. This simple mode is just placing a suitable-sized piece of broken pot with its convex side downwards, and so as to cover the hole completely, and from one-quarter to one-half inch on each side of it. This will be as secure a barrier to the worm as the zinc cap. "Oh!" but says our potter, "it will get choked up with earth and prevent drainage." And so it would, just as any one piece of drainage in a pot in which the plant was to continue any time. But we by no means mean to confine our drainage to this one convex piece of crock with its rounded side downwards. Upon this we lay other pieces not quite so large, with their rounded side upwards, forming so many bridges over the first crock, and extending the process close to the sides of the pot. Upon these goes another layer of smaller pieces, and then a thin layer of smaller pieces

still, or washed pebbles or gravel, mostly from the size of beans to that of early peas, and over that again we place a layer of clean moss to prevent the earth above washing into the drainage, which it will be effectual in doing, if worms are prevented from entering and making a quagmire of the whole contents of the pot. This thorough drainage will be more secured if the compost of soil is open and has some pebbles and pieces of charcoal mixed with it. Remember, however, that open rough material for compost, and making the roughness proportionate to the size of the plant and the size of the pot, are different things from potting loosely. In all flowering plants the compost should be placed tight round the roots.

We commend these matters more especially to amateur and window-gardeners, with some of whom we find we have got into a scrape—rather a pleasant one, however, as we think we can see the way of getting out of it. We are reminded—"You have several times spoken of the impropriety of sowing and planting when the ground was wet, why, then, so anxious to plant after the last rain?" Again: "We have pretty well analysed and stored-up all your directions and principles about watering in-doors and out of doors, but we can hardly explain them in unison with a practice we noticed—one of your assistants syringing flower-beds in the afternoon of a hot sunny day." Well, in the first place, we have, for reasons often given, declined even digging ground when it is very wet. We would for similar reasons decline planting in ground very wet, because it is almost impossible to leave the ground behind you in a nice healthy open condition. But the rain made our ground in a nice pliable condition instead of dust-dry. It has never yet been soaked, but it had as much moisture as would render planting easy, and yet not supersede the necessity of watering each plant set out. There was, therefore, no likelihood of pothering the ground, otherwise there would have been no planting. But as it was, the water required for watering was reduced to a minimum, as the surrounding ground was not in a dry heated state to absorb it immoderately. In unison with the rule, water sufficiently when wanted, and wait until your services are again required, the word "sufficiently" should in the case of fresh-turned-out plants be understood to mean not deluging, but giving merely as much as is necessary, for much moisture will cool the ground at once, and cool it more by an increase of evaporation; so that a little water and often will often be better than a great deluging. Again, though the roots are moist they will not grow and absorb moisture at once; and in a hot sun the leaves will suffer from an excess of evaporation over absorption, and though, perhaps, shading would be a good remedy, we found the next best to be dewing the foliage gently from an engine, by which means a few potfuls of water will go over a large piece, and the vapour that rises from the heated soil is also very grateful to such fresh-turned-out plants.—R. F.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to The Editors of the "Journal of Horticulture, &c.," 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

MANURING A VINE-BORDER (G. Morris).—Manure as soon after the fruit is cut as you like. If you did it now and used much water, most likely the Grapes would crack.

MONOCOTYLEDON ENSEIFERUM CULTURE (W. X.).—From 55° to 60° will be a temperature quite high enough for the plants, with an increase during the day. Plenty of air will insure sturdy growth. Let them alone; if fresh-potted they will thrive in 60° until rooting freely.

VINES IN POTS (Z. C.).—Mr. Elphinstone published a little pamphlet on their culture, but it is out of print. There is a good essay by Mr. Appleby on the subject in No. 17 of this Journal, which you can have free by post if you remit four postage stamps.

GRAPE COLOURING (J. Price).—You must continue damping the floor, but omit the syringing. Give abundance of air, for depth of colour much depends upon that.

SEEDLING STRAWBERRY (B. W. Knight).—The fruit sent is very juicy and of excellent flavour; but we can give no further opinion on the merits, so much depends upon whether it is really a new variety, its habit, prolificacy, &c., all which can only be determined by a careful examination of a growing plant.

INSECTS (A Subscriber).—We found no caterpillar in your communication. The spots on the leaves seem to have been produced by a vegetable mould, and not by the action of an insect. Kollar's treatise on insects injurious to fruit trees, was translated by Miss Loudon, and will suit your purpose.—J. O. W.

RETAINING OLD MELONS OR PLANTING FRESH (W. W.).—Each is best under the different circumstances. If the plants have not borne heavily, and the vines are fresh, good second or third crops may be obtained from the same plants; but if, for securing fine flavour, the soil and the atmosphere have been kept rather dry, the plants are apt to suffer a little in consequence, and in that case, replanting with fresh strong plants is the best plan. It also gives an opportunity for cleaning the place, and at least resurfacing the beds. The plants must be pretty good to do well after the middle of July, as late autumn Melons are generally of little use if September and October happen to be dull and wet.

THRIPS AND RED SPIDER ON MELONS (W. D.).—The atmosphere of your pit has been kept too dry. Smoke two nights in succession with shag tobacco; syringe lightly the following morning; shade from bright sun, and keep the air of the pit moist. The foliage must be dry before smoking. This will destroy thrips; but no amount of tobacco smoke will destroy the eggs; therefore, whenever thrips appear smoke again, and continue to do so until the pest is thoroughly exterminated. Choose a fine day to deal with the red spider. Dissolve as much gum arabic as will lie on a penny in a pint of rain water, and when that is done mix half a pound of sulphur with it, forming the whole into a paste-like substance, which is put into three gallons of rain water heated to 120°. Have the hot-water pipes heated to 160° by 4 p.m., then shut up the pit, and syringe the Melons with the sulphur solution, wetting every particle of the infested leaves and stems, and all the available evaporating-surface—as walls, &c. Syringe the hot-water pipes with the same mixture until the pit is full of steam. Gradually lower the temperature of the heating-surface; keep the pit close and shaded from bright sun for a few days, when the Melons will be clear of red spider, and no fear being entertained of its return (for the sulphur left on the walls, &c., will act as a preventive), treat them in the usual way. This will not only kill red spider, but the moisture by which it is accompanied will materially aid in exterminating thrips.

SULPHUR-DREDGER (Orchidophilus).—We have used it for some years, and can confidently recommend it. You can have Indexes of nearly all the early Volumes of THE COTTAGE GARDENER.

YOUNG VINES NOT FLOURISHING (An Amateur, Nantwich).—We have nothing to add to our recommendation last week. The Vines are weakly, and this probably arises from their being planted too deep.

DESTROYING GOOSEBERRY CATERPILLARS (Mrs. F. S. A.).—We believe the most effectual mode is to have the caterpillars picked off by hand. One or two women will clear a large plantation in a day. A comprehensive mode of destroying these pests is to dust the leaves thoroughly with fresh white hellebore powder. Cover the surface of the soil 2 inches deep with spent tanner's bark, removing it in the autumn and burning it. This will prevent the occurrence of caterpillars next year.

FORMAN'S CREW APPLE (A Subscriber).—We have made every search for the origin of the name "Crew," but have failed. Can any of our correspondents inform us?

SEEDLING CALCEOLARIA (H. Major).—Very fine as to size—1½-inch across—and good as to colour and marking.

NAMES OF PLANTS (A Lady Subscriber).—Nos. 1 and 2, forms of *Selaginella Martensii*; 3, *S. Galeottii*; 4, *S. cnsia*. (*R. W. B.*)—*Escallonia grandiflora*, a hardy shrub. (*Homo*).—1, *Lastrea Filix-mas*; 2, *Blechnum boreale*; 3, *Lastrea dilatata*; 4, *Scopolendrium vulgare*; 5, *Athyrium Filix-femina*. (*D. C. D.*)—1, *Eunymis europæus*; 2, *Philadelphus coronarius*; 3, *Staphylea pinnata*; 4, *Lychnis diurna*. (*P. S.*)—1, *Chenopodium Bonus-Hemiscus*; 2, *Veronica serpyllifolia*; 3, *Hieracium pilosella*; 5, *Rumex*, too young to determine—looks like *sanguineus*. (*A Subscriber, E.*)—*Echynanthus ramosissimus*. (*B. E.*)—1, *Corydalis lutea*; 2, *Gomphocarpus fruticosus*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY SHOWS.

JUNE 27th to 30th. SHEFFIELD. Sec., Mr. H. Warhurst, Cremorne Gardens, Sheffield.

JULY 2nd. PRESCOT. Sec., Mr. James Beesley.

JULY 20th to 24th. WORCESTERSHIRE. Sec., Mr. J. Holland, Chesnut Walk, Worcester. Entries close June 20th.

AUGUST 29th. HALIFAX AND CALDER VALE. Sec., Mr. W. Irvine, Halifax.

SEPTEMBER 2nd. COTTINGHAM. Sec., Mr. J. Britain.

JAPANESE FOWLS.

HAVE any efforts been made for the importation of the new breeds of fowls seen in Japan by Mr. Fortune?

At Nagasaki, he says, "I observed some striking and beautiful kinds of fowls. These were rather above the ordinary size, but were remarkable for their fine plumage. The tail-feathers were long and gracefully curved, and fine silky ones hung down on each side of the hinder part of the back. Bantams were also plentiful, and bold independent-looking little fellows they were."

At Yokuhama Mr. Fortune again remarks, "The different varieties of fowls struck me more than anything else. The kind which I had seen at Nagasaki was here also, and, in addition, a pure white bird with a fine long arched tail, and long silky

feathers hanging down from each side of the back. This is a very beautiful bird, and well worth being introduced into Europe, if it is not already here."

[Since the above was extracted, we see the following notice in the Report of the Acclimatisation Society:—"A pair of Japanese fowls presented by A. D. Bartlett, Esq., and now under the care of Mr. Bush, have passed the winter in his aviary, and are now laying. Their eggs are of a deeper colour and rounder than those of the Cochins-China fowls." These may represent one of the varieties seen by Mr. Fortune. We wish the Report had included a description of the fowls.]

THE THORNE EXHIBITION OF POULTRY.

IN accordance with the practice for many years past, this excellent Show of poultry was held in the grounds opposite the Hall of Makin Durham, Esq., giving the whole affair a most rural and picturesque appearance. To the kindness of the worthy proprietor in permitting these annual exhibitions to be thus held the Society are deeply indebted, the Exhibition causing an influx of strangers into Thorne that few parties from mere hearsay could credit, and proving itself quite an annual *réunion*, anxiously looked forward to for many weeks previously. The present year's Show far surpassed those hitherto held in the number of entries, whilst even a cursory glance at the printed catalogue proves that nearly all of our most reputed poultry amateurs competed. The grounds enjoy the advantages of timber of many years' growth, whilst the constant fitting to and fro of the rooks overhead gave a novelty rarely to be met with at such exhibitions. The day was luckily favourable, the fair visitants were mostly decked in their gayest holiday gear, every one seemed determined to enjoy themselves, and, consequently, the whole scene was one of unalloyed pleasure and satisfaction.

The pens (considerably above three hundred), were very nicely arranged in single line beneath the shade of the trees, which added materially to the comfort of both the poultry and the Pigeons. The Rabbits, however, seemed quite to enjoy the solar rays, and we will dismiss this latter branch of the Show by simply stating most of the specimens were very good. Considerable attention was drawn also to a temporary grotto-like erection, composed of a full complement of gypsum for rockery, ornamented with a variety of growing ferns, flowers, &c., the whole surmounted by a large preserved white sea bear, the oddity of the affair being greatly increased by the fact of the aforesaid gentleman wearing for this occasion a very thick great coat of moss, covering all else save his head, feet, and neck. Under the great summer heat that prevailed, had animation existed no doubt poor Bruin would have felt as desirous of throwing off every extra garment as did most of his visitors. Mr. Cason's and Mr. Burr's grottos were at once pleasing and interesting bye-plays to the general scene, the one with the addition of suitable canvass, representing a highland glen, the other an eastern drawing-room. Under so varied an attraction, heightened by the almost incessant performances of the Thorne Brass Subscription Band, it will be no matter of surprise to hear that the money taken at the doors showed a very gratifying advance on the amount derivable on previous occasions.

Another great cause of the success of the Thorne Society arises, without doubt, from its happy possession of one of the most obliging and business-like Hon. Secretaries imaginable. Courteous alike to all, yet keeping the success of the proceedings under constant attention, Mr. Richardson well merits the good opinions entertained of him by his colleagues, and affords a good example to not a few of our poultry secretaries that might be followed with the like welcome results, if applied to their particular societies.

At this particular season we naturally expect to find poultry fast approaching moulting time, and on no variety of fowls does want of condition tell with greater force than on *Spanish*. This class was, nevertheless, a good one; but it appeared in not a few instances a pity to place really well-bred birds before the public in so sad trim as that we now refer to. A powerful objection to thus exhibiting them is simply this, that while each pen-feather contains blood, it offers, under close confinement, the greatest of all possible inducements to fowls of any breed to become absolute cannibals—so much so that oftentimes, unsatisfied with the immature feather alone, they proceed to eating away piecemeal the living flesh of their companions. We draw par-

ticular attention to this fact, as this morbid desire if once contracted, is one of the most difficult of any of the evil practices of exhibition poultry to eradicate; and it is a propensity that any little injury by which blood is drawn at once brings into action, if the unfortunate sufferer is unhappily placed in a position where escape is unavailable.

In *Cochins*, Buffs were first, and Partridge-coloured second, both colours being well shown. Although only two pens of *Game* (Whites or Piles) were placed, they were very creditable ones. It was in the Black-breasted Game fowls and other Reds that competition reached its highest point. Here Messrs. Adams, Boyes, Brierley, Fletcher, Helliwell, Julian, and several other noted Game-breeders tried their hardest for the mastery. As must be the event where such a rivalry existed, the heaviest in competition prevailed, and the result proved how equally the honours became distributed. Mr. Fletcher gained the silver cup for single Game cocks with a truly magnificent "stag" Black-breasted Red, and it was the universal opinion that it will be long before we shall look upon his like again. For the Silver Game cup, for a pen of three, Mr. Adams and Mr. Julian, both exhibitors from Beverley, were evidently a long time in close balance, the Judge (who officiated openly) evidently scrutinising each pen again and again as though almost hopelessly striving to find a fault with either. After the most rigid inspection, a faulty eye in one of Mr. Julian's hens gave Mr. Adams the superiority. The silver cup for *Game Bantams*, on the contrary, was a mere "walk over" to the noted pen of Mr. H. D. Bayley.

The *Red Caps* shown were remarkably good, and in the class for Any variety of chickens a pen of Black Red Game and another of White Dorking chickens were so equally perfect that the Judge "admitted it an injustice to either pen to obtain a second position." This anomaly will occasionally occur where many breeds compete in the same class.

A class for *Single Cocks* of any breed brought into competition a great variety, a Grey Dorking being first, a Golden Poland the winner of the second prize. In this class no less than seven excellent Game cocks were shown; but as a class for single Game cocks existed, it is scarcely just this variety should be admitted into a competition where a position is already afforded them in one particularly devoted to Game cocks only.

The *Aylesbury Ducks* were worthy of mention, Mrs. Seamons holding her customary place in the prize list. The *Geese* and *Turkeys* were also good.

In the *Pigeons*, almost every class was well filled, but no new variety presented itself. The Show closed the same evening, and every bird was forwarded to its owner without misadventure of any kind.

SPANISH.—First, H. Beldon, Bradford. Second, J. Dixon, Bradford. Highly Commended, F. Siddall, Halifax; J. Brown, Sheffield.

COCHIN-CHINA.—First, Messrs. H. & G. Newton, Garforth, Leeds. Second, R. White, Broomhall Park, Sheffield. Commended, Messrs. H. & G. Newton.

DORKING.—First, R. M. Stark, Hull. Second, J. Sledmore, Epworth. Highly Commended, E. Jefferson, Epworth; Hon. T. C. H. Hawke. Womersley. Commended, Master L. Fosbrooke, Hatfield; Hon. T. C. H. Hawke, Womersley.

GAME (White and Piles).—First, H. Adams, Beverley. Second, T. Walker, Doncaster.

GAME (Black-breasted and other Reds).—First, H. Adams, Beverley. Second, H. M. Julian, Beverley. Highly Commended, Messrs. Sale & Bentley, Crowle; G. Helliwell, Walkley; C. W. Brierley, Rochdale.

GAME (Duckwings and other Greys and Blues).—First, C. W. Brierley, Rochdale. Second, G. Helliwell, Walkley. Commended, H. Adams, Beverley.

GAME (Any breed).—Silver Cup, H. Adams, Beverley. Highly Commended, G. Helliwell, Walkley; H. Adams; H. M. Julian, Beverley. Commended, H. Beldon, Bradford; J. Fletcher, Stoneclough, Manchester.

SINGLE GAME COCK (Any breed).—Silver Cup, J. Fletcher, Stoneclough, Manchester. Highly Commended, W. Boyes, Beverley; H. M. Julian, Beverley; G. Helliwell, Walkley; G. Valentine, Habiasthorpe. Commended, H. Crossley, Broomfield, Halifax; H. Beldon, Bradford; G. Marshall, Barmbro'; H. Adams, Beverley; C. W. Brierley, Rochdale.

POLANDS (Any variety).—First and Second, J. Dixon, Bradford. Commended, H. Beldon, Bradford.

HAMBURG (Silver-spangled).—First, H. Beldon, Bradford. Second, J. B. Hepworth, Bearswood Green. Commended, J. Dixon, Bradford.

HAMBURG (Golden-spangled).—First, C. W. Brierley, Rochdale. Second, J. Dixon, Bradford. Highly Commended, H. Beldon, Bradford. Commended, Messrs. Burch & Bolter, Sheffield.

HAMBURG (Silver-pencilled).—First, H. Beldon, Bradford. Second, J. Dixon, Bradford. Highly Commended, J. Harrop, Walkley.

HAMBURG (Golden-pencilled).—First, C. W. Brierley, Rochdale. Second, S. Smith, Northowram, Halifax. Highly Commended, H. Beldon, Bradford.

ANY FARMYARD CROSS.—First, Messrs. Burch & Boulter, Sheffield.

Second, H. Beldon, Bradford. Commended, J. Calvert, Thorne; Messrs. H. & G. Newton, Garforth; T. Downing, Thorne.

GAME BANTAMS (Any breed).—Silver Cup, T. H. D. Bailey, Ickwell House, Biggleswade. Highly Commended, C. W. Brierley, Rochdale. Commended, J. Crossland, Wakefield; W. Silvester, Market Hall, Sheffield; E. Yearley, Wisewood, Sheffield.

BANTAMS (Silver or Golden-laced).—First, H. Beldon, Bradford. Second, E. Yearley, Wisewood, Sheffield. Commended, R. M. Stark, Hull; J. Staley, North Collingham, Newark.

BANTAMS (Black, White, or any colour).—First, J. Dixon, Bradford. Second, R. M. Stark, Hull.

ANY BREED OR CROSS.—First, R. M. Stark, Hull (Grey Dorking). Second, J. Dixon, Bradford (Golden Poland). Highly Commended, Hon. T. C. H. Hawke, Womersley (Brahma); R. White, Sheffield (Cochin). *Hens*.—First, H. Beldon, Bradford (Spanish). Second, J. J. Cranidge, Crowle (Red Caps). Highly Commended, W. Boyes, Beverley (Brown Red); E. Brown, Sheffield (Spanish); C. W. Brierley, Rochdale (Black Red Game); R. Williamson, Wheatley (Spanish); Commended, Hon. T. C. H. Hawke, Womersley (Cochin); J. Gibson, Hatfield (Golden-spangled Hamburg).

CHICKENS (Any pure breed).—First, A. Bell, Burnley (Black Red Game). Second, M. Durham, Thorne (White Dorking). Highly Commended, J. Dixon, Bradford (Silver-spangled Hamburgs); T. Pidd, Crowle (Brown Red Game).

GUINEA FOWLS.—First, J. Dixon, Bradford. Second, H. Merkin, Driffield.

TURKEYS.—First, Miss Blacker, Mooredens. Second and Commended, J. Dixon, Bradford.

GEES.—First, J. Dixon, Bradford. Second, Hon. F. C. H. Hawke, Womersley. *Gibbs*.—First, G. Outwin, Hatfield Park. Second, J. Lee, Sykehouse. Highly Commended, R. Longhorn, Armpyn. Commended, Miss Aldam, Holmes, Epworth.

DUCKS (Any breed).—First, J. Dixon, Bradford. Second, H. Beldon, Bradford.

DUCKS (Aylesbury).—First and Second, Mrs. M. Seamons, Aylesbury.

RABBITS.—*Buck and Doe*.—First, G. Woodley, Thorne. Second, I. T. Spencer, Doncaster. Highly Commended, G. White, Thorne; J. Holmes, Hatfield. *Buck*.—First, W. Trimmingham, Thorne. Second, J. Sunderland, Halifax. *Doe*.—First, J. Greaser, Thorne. Second, J. Sunderland, jun. Highly Commended, R. Gravit, Thorne. *For weight*.—First, G. Woodley, Second, J. Gregory, Hatfield.

PIGEONS.

CARRIERS.—First, W. Carlton, Howden. Second, J. B. Hepworth, Beerswood Green. Highly Commended, S. Robson, Brotherton. Commended, H. Beldon, Bradford; H. Yearley, Birmingham.

CROPPERS.—First, H. Beldon, Bradford. Second, S. Robson, Brotherton. Highly Commended, H. Yearley, Birmingham; E. Brown, Sheffield; C. W. Brierley, Rochdale.

TUMBLERS.—First, H. Beldon, Bradford. Second, J. Mann, Pigburn. Highly Commended, R. Gravit, Thorne.

JACOBS.—First, C. H. Brierley, Rochdale. Second, W. Riley, Belton. Highly Commended, T. M. Stoker, Darrington; H. Yearley, Birmingham.

NUNS.—First, F. Key, Beverley. Second, H. Beldon, Bradford. Commended, H. Yearley, Birmingham.

TRUMPETERS.—First, S. Robson, Brotherton. Second, W. Carlton, Howden. Highly Commended, A. Beldon, Bradford; — Yearley, Birmingham; F. Key, Beverley.

TURBITS.—First, H. Beldon, Bradford. Second, Messrs. Holding & Robinson, Beverley. Commended, E. Jobling, Newcastle.

FANTAILS.—First, F. Key, Beverley. Second, E. Brown, Sheffield. Highly Commended, E. Jobling, Newcastle.

OWLS.—First, H. Beldon, Bradford. Second, E. Jobling, Newcastle. Highly Commended, H. Ravenhill, Doncaster; W. Hattersley, Sheffield. Commended, H. Yearley, Birmingham.

EXTRA STOCK.—Commended, J. Greaser, Thorne.

Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, near Birmingham, awarded the prizes to poultry, Rabbits, and Pigeons.

THE BRADFORD SILVER CUP BLACK BANTAMS.

IN your remarks last week relative to Bantams at the Bath and West of England Poultry Exhibition you say, "Black ones secured the silver cup for the best pen of any breed of Bantams shown. They were excellent; but it was rumoured among amateurs the address of the owner was assumed—a report scarcely credible, so long as even the number of the house is added to the general address in the printed catalogue."

Having given currency to an impression, which, taken in conjunction with the late remarkable Black Bantam controversy, is calculated to throw suspicion on either the exhibitor or the birds, allow me to say the Bantams belong to my daughter, and have been exhibited thrice, each time successfully. In addition to your own report, a contemporary having characterised the pen as "perfect Blacks," it is, perhaps, unnecessary to say more than to inform certain "amateurs," that the name Kate Charlton is very little indeed of a myth, and that the address in the catalogue is the residence of—T. J. CHARLTON, Bradford.

DISTINCT VARIETIES OF DORKINGS.

It appears to me that the different breeds of Coloured Dorkings are very imperfectly classified. Although I do not pretend to know all the varieties, yet I know that besides Silver-Greys there is a variety in which the hens are of a light grey colour with a light hackle, and another of a dark grey colour with a dark hackle, and it is to these two varieties that I allude.

I think that it would be an improvement if each of these varieties had distinguishing names of their own. For instance: Parties advertising their stock for sale in THE JOURNAL OF HORTICULTURE should state which of these varieties it is they offer, so that those wishing to improve their breed by a change would have an opportunity of knowing from whom to purchase stock of the same colour as their own.—A NORTH BRITON.

[The two birds you mention are not sufficiently distinct to render necessary a separate classification of them; as very often the darker birds get much lighter after the first moult, and it often happens that the two colours, as described by you, are seen in the same brood, the produce of the same parents.]

BEE SEASON IN EAST LOTHIAN.

IN complying with the request of "A. W.," page 446 of THE JOURNAL OF HORTICULTURE, on the bee season, and "our success and failure" here, East Lothian, I have to state that this season, though warmer than last, has been no better for the bees obtaining food, owing to the frequent showers and dull days. I had my first swarm on the 11th, the same day I had one in 1862, one on the 14th, and one on the 17th from the artificial Ligurian hive which I made last year, July 26th. I expect other four as soon as the weather will allow them to come, and these I intend to make artificial Ligurian hives, by taking a bar-frame from my old Ligurian, depriving them of their own queen. The first swarm I put into a Stewarton-hive, being anxious to try that kind, believing it to be good for making honey.

On the 12th I took out two bars, one full of young brood in all stages, the other containing a good number of drones in all stages likewise, and put them into an empty box along with two empty combs, being determined to use every means to keep the Ligurians pure. In giving the queen the black bees of the hive I took the day previous, I did not want her to get any black drones, and I thought we had fallen on a simple method of doing this, as well as a secure one. I had the perforated zinc which some of your correspondents use for keeping out the drones from the supers. With it I covered the box containing the young brood, and by turning up the one containing the bees, placing the other on the top, I expected a good many bees would go into the upper one through the perforated zinc. Being aware, however, that all would not leave the queen, it would still make it easier to keep back the drones and queen. Notwithstanding a considerable amount of beating on the under hive containing the bees and queen, we could only induce a few to go through the zinc. We then had to resort to the old method of shaking them out on a sheet, a few at a time, and making them run into the hive, which they did at once, one keeping a piece of the perforated zinc ready at the mouth of the hive to prevent any drones entering. This was not much required, as there were only thirteen drones, which were easily secured before entering, and the queen also. They were all into the hive and on the stance in a quarter of an hour. I gave her a good feed at once, and in the afternoon they had begun carrying bee-bread, and although giving unmistakable symptoms of being in want of a queen till the following day, they are now working as well as any.

I intend to do other five or six in the same manner, and then send the whole of the Ligurians, old and young, away to a neighbour's garden, who has only two hives, which I will bring here. They will then be two miles from the nearest black bees, and where it is a considerable deal colder, being much higher and at the foot of the hills. The Ligurian drones in their hymeneal excursions may come this way, but I do not anticipate that the black ones will go into such a cold place. At all events, it is the only chance I have of keeping them pure, and had it not been that so many around here had lost all their stocks, I could not have managed it.

Some wishing to purchase from me the pure stock I have been at this trouble, otherwise I am disposed to think that a mixed breed or hybrid would be an improvement. I have obtained

three of Woodbury's straw bar-frame hives from Neighbour and Sons, and I consider them a great improvement on the wood ones. I will never allow my bees to be all the winter in these again. They may be used in the summer, when there is no moisture to condense in the inside of the hive, or where the movement of the bees prevents it; but in winter they are always wet to a certain extent; but I intend to put straw tops on the wood, which will help them a little.—ALEX. SHEARER, *Yester*.

AGE OF QUEENS—DISTANCE BEES FLY.

THE age of queens is sometimes difficult to ascertain when bees are left entirely to themselves; they being able to replace the mother of the hive with a young one at the proper season if any accident happen to her. But in the case replied to at page 335 there is no foundation for doubt, and it served for an experiment to prove that the impregnation of the queen lasts her lifetime.

In 1848 I put two swarms together, leaving to themselves to decide which queen should be the ruling sovereign. The surviving queen appeared to be a little wounded in the conflict, both her wings being peculiarly cut, and this prevented her from flying. She had always to be watched at swarming time, and she led off swarms for seven successive years. She was of an unmistakeable appearance; for besides her injured wings she was very little larger than a worker, which rendered all my attention necessary to detect her.

It is the custom here for people to remove their hives at different seasons of the year. When they remove them in spring, a mile or a mile and a half suffices to prevent their coming back to the place they were removed from, and in summer two miles will suffice; but in the month of August, when taken to the heather, it is a regular thing for them to come back in great numbers the distance of three miles and a half. They are not so apt to come back in the height of the working season as when it is past and when necessity calls them to a distance.

The nature of the case described at page 336 was of twelve hives, which stood at Nempfar in the parish of Lanark. They were removed at three different times, four at a time, on a hand-barrow every other night to the parish of Carmichael fully six miles, and a pretty straight road—almost a direct line. There was a patch of heather about midway between these two places, which was a little earlier in bloom than the heather was at their new stand. This would entice them back to their old working-place. Part of the bees from every hive came back to their old stand and clustered till the following day, and then departed, probably in search of their hives. The people in Arran say that it is common to see bees on the Holy Island at Lamlash Bay, which is allowed to be a distance of three nautical miles from shore to shore, and no bees were kept on that island at that time. I have seen bees at least two miles from the shore between Arran and the Cumbræes alighting on the steamboats, which will show how far a bee will fly without alighting.—A LANARKSHIRE BEE-KEEPER, *Blantyre*.

DEATH OF QUEENS—BEE-KEEPING IN STAFFORDSHIRE.

I ENCLOSE two Ligurian queens, and shall be glad of an opinion upon them. One is a supernumerary that came off with a swarm, and is a fine insect and fairly coloured. The second is a very fine, well-coloured queen, and is, I fear, the old queen—i.e., one reared last year, from a storified-hive. The hive is densely peopled, but the bees have not yet taken to the super. If my opinion is correct, I much regret her loss, as she bred finer-coloured workers than any of my other queens—I think fully equal to my original one received from "A DEVONSHIRE BEE-KEEPER."

My four stocks all passed safely through the winter, and were strong and forward in the spring, and during the blossoming of the damson trees increased in weight. Since that time the weather has been most unpropitious, and still continues so. My experiments have, however, been much more successful than those made last year. I made my first swarm on the 9th, by taking four frames with brood and bees out of the swarm of June 4th, 1862 (as I believed that hive to contain the old queen), and placing them in a four-frame hive. I then put this and the parent hive side by side, when it was soon evident

that the queen was in the small hive, as there was great agitation in the old one. I placed the swarm on the stand of another stock, and in a day or two shifted them into a ten-frame hive, supplying them with four new frames of empty comb, and at the same time giving the old stock two frames of empty comb to discourage the building of drone-combs. Had the queen not been in the nucleus-box, I should have kept the bees in that hive until the young queens made their appearance, and then have shifted them into a larger hive.

On the 20th I made a second swarm, by abstracting a single comb with a sealed royal cell into a nucleus-box, and placing it on the stand of another stock. On the 23rd a swarm came out of the old hive, and another will, if the weather permit, come off soon, as they have been piping strenuously.

I am feeding the swarms liberally, as there is no honey to be had, and a poor prospect for the future, as the land is sadly burned up for want of rain. My hives were fully ventilated until the 8th of February, and the boxes consequently were perfectly dry, without the slightest condensation on the windows. In March, the condensation was considerable, but did not produce any evil consequences. Owing to the mildness of the season, the loss of weight in my hives was very considerable, about 10, 9, 8, and 7 lbs. in the four stocks respectively, from the 1st of November to the 1st of February. Where would they have been if they had only weighed 10 lbs. nett in September, as recommended by "G. F. B.?"

The advantages of the new arrangement in bars, and having a space between the bars and crown-board are very great, and most materially contribute to the well-being of the bees. The ventilation is rendered complete and perfect, as the current passes through between all the combs, and out at the central hole in the crown-board. Formerly I used to find a great deal of damp at the sides of the hives away from the centre. At the same time the approximation of the combs seems to greatly favour the breeding of the queen in the spring, as a much smaller number of bees covers a greater surface of combs than when the bars were placed at a greater distance from each other. I also find the indiarubber gloves invaluable.—J. E. B.

[The smaller of the two queens was a virgin, and was, doubtless, a supernumerary one that accompanied the swarm. The larger we ascertained to have been unquestionably impregnated, and regret, therefore, to confirm your fears as to her being the old queen. This is not the first instance in which we have found valuable queens fall victims to the rivalry of their daughters, either immediately before or just after the issue of a swarm, and we are inclined to believe that it is more common than is generally supposed.]

OUR LETTER BOX.

DUCKS AT BATH AND WEST OF ENGLAND SHOW.—The Cup for the best pen of Ducks was awarded to Mr. Rodbard's Rouens, and not to Mr. Fowler's Aylesburys.

ROUEN AND EAST INDIAN DUCKS (*W. W.*).—The Rouen is much the larger bird. The East Indian when pure bred is a small compact Duck. Both breeds are prolific, and the early laying is much regulated by the age and condition of the birds themselves. This season the Rouen Ducks generally have laid better than the East Indian.

PROFITABLE BREEDS OF FOWLS (*S. T.*).—In the neighbourhood of large towns, where new-laid eggs are in demand, either Cochins, Brahmas, or Spanish would be good birds for you, as they require but little range. If you have a large space for them, then any breed will thrive with you. Young healthy birds should be selected, as they lay earlier than older ones; and pullets for early laying should be introduced annually, and the older hens got rid of.

COLOUR OF GREY DORRING CHICKENS (*E. A. C.*).—Grey Dorking chickens vary very much in colour when first hatched, many appearing almost white and others as nearly black. The first feathers are often speckled with white, which disappears as the birds get older, and others seem to be as nearly black and then alter.

CROSS BETWEEN CANARY AND YELLOWHAMMER (*Wooton*).—We are not aware of any instance of the Canary and Yellowhammer having been cross-bred, but we see no reason why they should not breed together. The most probable British bird that the Yellowhammer would pair with would be a hen Greenfinch.

REARING YOUNG NIGHTINGALES (*An Old Subscriber*).—To rear young Nightingales feed them on fresh beef, scraped fine, and hard-boiled eggs, also chopped fine, with a little scalded bread; and when they are fledged, leave off the bread and give them occasionally a few mealworms. Keep them in a quiet place and shaded from the sun.

LIGURIAN BEES (*W. W.*).—If you write to T. Woodbury, Esq., Mount Radford, Exeter, he will give you all the information you need.

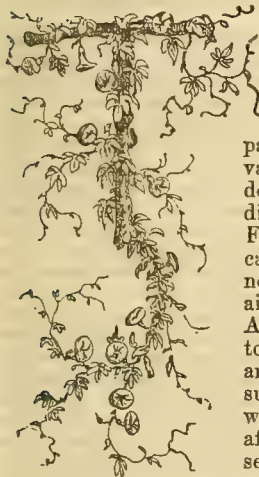
TAKING HONEY (*S. B.*).—Honey should be taken in the autumn, as soon as gathering is over and breeding either diminishes or ceases entirely. The mode of uniting bees by driving is fully described in pages 45 and 46 of "Bee-keeping for the Many."

WEEKLY CALENDAR.

Day of M th Week.		JUNE 30—JULY 6, 1863.	WEATHER NEAR LONDON IN 1862.				Sun Rises.		Sun Sets.		Moon Rises and Sets	Moon's Age.	Clock before Sun.	Day of Year.
			Brometer.	Thermom.	Wind.	Rain in Inches.								
30	Tu	Hormann born, 1640. B.	29.923—29.878	degrees.			m. h.	m. h.	m. h.				m. s.	
1	W	PRINCESS ALICE MARRIED, 1862.	29.888—29.873	71—40	N.W.	—	48 af 3	18 af 8	47 a. 2			14	3 14	181
2	Th	Martin died, 1727. B.	29.803—29.779	72—54	N.W.	—	49 3	18 8	rises	0		3	25	182
3	F	Sea Lungwort flowers.	29.876—29.795	70—43	N.W.	.01	49 3	18 8	53 8	16		3	27	183
4	S	Jungermann born, 1572. B.	29.857—29.780	69—39	W.	.23	50 3	18 8	27 9	17		3	48	184
5	SUN	5 SUNDAY AFTER TRINITY.	29.653—29.543	69—51	S.W.	—	51 3	17 8	54 9	18		3	59	185
6	M	O. Jacob born, 1550. B.	29.653—29.543	74—52	S.E.	.29	51 3	17 8	17 10	19		4	10	186
			29.424—29.381	72—53	W.	.02	52 3	16 8	40 10	20		4	20	187

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-six years, the average highest and lowest temperatures of these days are 74.6° and 51.0° respectively. The greatest heat, 97°, occurred on the 5th, in 1852; and the lowest cold, 35°, on the 30th, in 1849. During the period 152 days were fine, and on 100 rain fell.

PEAS, AND HOW TO GROW THEM.



serve the table no vegetable contributes more than the Pea—the Potato always excepted. It does moderately well on all soils, and in all parts of our climate, high elevations excepted. Peas, however, do best on lightish loams, and indifferently on a clay formation. For a very early crop the soil can hardly be too light, for it is not quality nor quantity that is aimed at, but extreme earliness. A somewhat stronger soil is best to afford a succession of early Peas, and a deep, loamy soil is what suits main crops. Heavy soils with a good deal of marl in them afford excellent Peas late in the season, and in dry summers heavy soil is better than light. Taken

in a general way, Peas delight in deep, rich, and friable loamy soil, and by well exposing heavy soil to the influence of the weather, and forking it over on dry, frosty mornings, the most tenacious soil may be brought into a condition to suit this crop. Trenching is almost necessary to secure good Peas; and an open site, but sheltered from strong gales, is essential. A liberal dressing of manure is necessary, and should be well mixed with the soil, for when the roots are very highly fed the Peas run too much to haulm, become gross instead of sturdy, and never produce so abundantly as those on moderately rich soils.

Peas may be divided into numerous sections, but I shall be content to deal with them in three ways. First, in small gardens; Secondly, in moderate-sized gardens; and Thirdly, in large gardens. I will provide for a succession of this prime esculent in all three cases, and give the earliest period they have come into bearing with me and my neighbours, and the latest period at which they may be expected.

The earliest period we have heard of Peas being gathered in this county (Yorkshire), was the Early May, on the 29th of that month, and I have gathered Peas myself on the 17th of December, and have heard of their being gathered on the 25th of that month. These, however, are extreme cases, and are no criterion to work by. In well-sheltered, sunny localities, and on light soils, the 7th of June is a very fair time to gather early Peas, and between that date and the 15th Peas may be expected in quantity. On heavy soils they will be a fortnight later, and in high, bleak, and cold soils, a fortnight later still. From that time Peas can be had until the frost cuts them off.

Very much depends on the weather, and the condition of the Peas, to determine the amount of frost that will destroy them. If the weather has been hot or dry some time before the frost occurs, 6° of frost will not harm them, and in one case I knew them stand 10° of frost

without sustaining any great injury; but if the weather has been warm and moist prior to a frost, very few degrees below freezing will destroy them.

1ST. PEAS IN SMALL GARDENS.—Large or tall growers are not adapted to limited areas. They take up too much room, and overshadow everything else. But, "I like Marrowfats," I hear some one say. Well, and you shall have them. Dig or trench the Pea-ground as early as possible in the autumn, giving a good dressing of manure, and if the soil be heavy or tenacious throw it into ridges as roughly as possible, throw it back early in February, choosing a dry frosty morning for the operation, breaking and pulverising with a fork (spades are puddle-makers on heavy soils), all the hard lumps not frozen, and leave the whole as level as possible. Any time after the 15th of February sow, when the weather permits, a gill of Dillistone's Early Prolific, and the same quantity of Sangster's No. 1, or its synonyme Daniel O'Rourke, choosing the warmest corner and most sunny part of the land set apart for Peas. Allow 3 feet between the rows; and if you like Spinach, and have the ends of the Pea-rows pointing north and south, sow a row between the Peas, and a few Radishes may be sown between also. The drills should not be deeper than an inch, and if the Peas be covered that depth it is enough. If sown much deeper the seed will rot, if the season be cold and wet, and what we very often blame the seedsman for too often is our own fault. Should any fear of mice being troublesome be apprehended, rub the moistened Peas in red lead before sowing, and set a brick-trap or two to prevent their nibbling the points of the shoots off when they appear, and if slugs are troublesome sprinkle soot over and around the Peas. There is another enemy, and that is my friend the sparrow. Black thread strung about 6 inches above the Peas hung with bits of glass, will keep him at bay; but pray do not kill him with poisoned wheat, he will make amends for his thieving propensities by eating thousands of caterpillars.

Early in March sow a row, a gill or a pint, according to the quantity of ground, of Sangster's No. 1, and the same of Bishop's Longpodded. Sow a little Spinach and a few Radishes, or a bit of Lettuce seed between the rows to gather or cut early. Never mind what this body or t'other body says about their spoiling Peas, for I follow this plan myself, and get a few nice dishes of Spinach for my master's table, some nice Radishes to eat with cheese, and a few Lettuce plants to transplant, and these are off before the Peas attain any great height, so that there is no fear of their being smothered.

Prepare some Larch or Spruce branches, for those make the best pea-sticks, Beech and Hornbeam are the next best, and Hazels will do well. Point those neatly, and set them in a corner to be ready against the time when the Peas are 3 inches high, when draw some earth to the Peas and put in the sticks on both sides of the row, keeping them as wide at top as at bottom, and not letting them meet at top, as if Peas were grown to be huddled and smothered. The sticks are best when a little longer than the specified height of the various kinds,

for a wet season induces them to grow taller, and a dry season dwarfer. But the main point of all in sticking Peas is to place them firmly in the soil. If placed so that they move to and fro in a gale, well-filled pods need not be looked for. The pea-haulm is so brittle and so liable to be broken, that good twiggy sticks, and firm set, is a main point in Pea-growing. Sticks for sorts growing 3 feet high should be 4 feet long, and all 1 foot longer than their height, so as to allow for the part thrust into the soil, and a little above, to meet the exigencies of the season.

Sow another crop on the 15th of March, employing Scimitar and Perfection (Veitch), allowing 4 feet between the rows. On 1st of April sow Perfection and Flack's Imperial Victory; again on the 15th sow Alliance, and on the 1st of May, and 15th of same, a sowing of Perfection to be made. June 1st, sow Hairs' Dwarf Mammoth, and on the 15th, the Prizetaker, synonyme Bellamy's Improved Early Green Marrow. Finally, sow Bishop's Dwarf, and Burbridge's Eclipse on the 1st of July. The following table will show at a glance, the beginning, half-way distance, and the end:—

Time of Sowing.	Sort.	Weeks Required to Mature from sowing in Average Seasons.	Height in Feet.
Feb. 15.	{Early Prolific	16*	2
	{Sangster's No. 1}	17	2½—3
March 1.	{Sangster's No. 1}	18	2½—3
	{Bishop's Longpod	17	3½
March 15.	{Scimitar	18	4
	{Perfection	17	4
April 1.	{Flack's Victory	16	3
April 15.	{Alliance	14	3
May 1.	{Perfection	16	4
May 15.	{ditto	16	3
June 1.	{Hairs' Mammoth	16	3
June 15.	{Prizetaker	14	4
July 1.	{Bishop's Longpod	13	2½—3
	{Eclipse	14	2½—3

All the varieties except Prolific (Dillistone's), which yields its pods together, will continue in bearing for fourteen days, and the late kinds to nearly six weeks. Stick, earthing previously, advancing crops, and in dry weather pour water freely—a drenching twice a-week; but if dribblings can only be given, sprinkle the haulms through a fine-rosed watering-pot. They are sure to be refreshed a little by the operation. Copious waterings prolong the bearing much, and weak guano or manure water is a good stimulant in dry weather, provided enough be given to reach the roots.

When the crop is fit to gather (which is when the Peas are not so young as to be after boiling a hollow inside filled with water, nor so old as to be mealy, but just between the two, and when nicely boiled will melt in the mouth like so much butter), do not pluck the pods off, for a sudden jerk frequently breaks the pea-haulm to the great injury of the remaining pods. A pair of scissors in the hand of the amateur will enable him to gather his Peas without injuring the remaining pods better than can be done with the hand by the initiated. Barren and half-filled pods more frequently are caused by the careless manner in which Peas are gathered than anything else. I have seen a flourishing crop of Peas after the first picking with the haulms broken, wrenched, and twisted about, and heard the owner complain of the weather preventing his Peas filling. When the pea haulm gets bent, to say nothing of broken, well-filled pods need not be looked for.

No good results from allowing pea-haulms to remain on the ground after the crop is gathered, but positive injury. They are an eyesore, and rob the soil of the benefit derived from exposure to the sun and air: therefore, remove all the haulm immediately the whole crop is gathered, and manure, trench, and dig the ground ready for the next crop; but as an amateur mostly pays for his garden ground by the yard instead of, as in the country, by the acre, it behoves him to look well after his fallows, and so keep every inch of ground under crop. I am one of the very few gardeners who contend vegetable-growing ought to pay, and I consider a writer's argument that few gardeners can, or employers expect, or amateurs wish, to make their gardens pay an absurdity. There is the gratification derived from gardening pursuits; but very few employers indeed would have a garden

if it cost more than the produce is worth, and many amateurs purchase their vegetables because they find it more profitable to do so than to grow them. A writer bringing out an idea with a flourish of trumpets in fruit or vegetable matters, and acting on the idea, "nobody expects gardening to pay," not only deceives himself but those who make gardening a profitable recreation.

Few amateurs grow Peas because writers tell them they can purchase them cheaper than they can grow them. I ask those who have been thus influenced to grow Peas but for one year; and if they do not like the Peas of their own growing better, because more sweet, tender, and well-flavoured than those purchased and for half the money, reckoning nothing for passing a few delightful hours in garden pursuits after the busy duties of the shop and office are over, set me down for a bungler. If the vegetables grown do not save the bread loaf, prevent the necessity for physic, place a stumbling-block before the dram and beershop door, and give smiling wives and happy homes, I will on evidence from the mouth of one witness make a public retraction and apology.

The land that we daily see set apart for building-ground lying idle for years, would, if properly fenced in, let readily to artisans and others for garden purposes, and yield good interest to the owner for the little money expended in fencing; whereas, as it is at present, it only forms a playground for the gambler. The difficulty in obtaining garden ground in towns, and the very little encouragement given to the cottage and amateur gardener by horticultural societies, is a great hindrance to town-gardening. Many horticultural societies that were formed to promote and encourage a love for gardening amongst cottagers and amateurs, have been perverted to serve the interest of the gardener. As a gardener, I hold this to be an injustice to those that contribute to the funds, and a direct discouragement to the amateur and cottage gardener. I do not see the propriety of giving £10 for twelve stove and greenhouse plants to be competed for by gentlemen's gardeners and nurserymen by a provincial society whose professed aim is to promote a love for garden recreations amongst the working classes. If those plants are shown as specimens at which the amateur is to aim, I must confess that it is as bad as teaching a child Euclid before he has learnt the alphabet. A few good prizes given by such society for subjects that any amateur can grow as well as gentlemen's gardeners is, no doubt, good; but to get subscriptions under the condition that they are to be applied to the object for which the society was founded, and fully two-thirds of the subscriptions appropriated to be competed for by gentlemen's gardeners, leaving but one-third to be competed for by amateurs and cottagers, is as wanton as it is wrong. I do not wish to hurt any one's feelings, but to give, as a public writer ought, a clear statement of circumstances that hinder or promote the interests of that we all seek—the advancement of horticulture.

Large prizes in any such society not only hinder many amateurs and cottagers for competing, but tend to make the amateur's garden a costly appendage, for he aims at growing things that are totally beyond his means, and so instead of being a blessing it becomes an injury. But these matters are so foreign to Pea-growing that I must leave them until a favourable opportunity offers; still, as they tend to make gardens costly, I wish to put the saddle on the right horse and not on the primrose of garden vegetables. I will endeavour to show that Peas are a paying crop even where land is high-rented.

I have not allowed anything for time and labour, for I consider the time and labour so spent more like pleasure than anything else, and I think that any individual will agree with me that the pleasure derived from gardening is more profitable than the alluring and deceiving delights of the many attractions and temptations in which towns abound.

Dr.	£ s. d.	Cr.	£ s. d.
Good garden ground can hardly be had near large towns under 1d. per yard per annum, and, as the annexed rough sketch will show, 100 yards are taken up with Peas	0 8 4	30 pecks of Peas at 1s. per peck (but where can they be bought for the money?)	1 10 0
5 quarts Peas	0 5 6	216 sticks of Celery at ½d. each	0 9 0
Manure for all crops	0 10 0	60 Cauliflowers at 1d. each	0 5 0
Pea-sticks 7s. 6d., half for one year's wear and tear	0 3 9	15 dishes of Greens at 1½d. each	0 1 10½
Celery plants, Cauliflower, and small seeds	0 5 0	12 dishes of Spinach at 2d. each	0 2 0
		4 quarts Strawberries	0 2 8
		Lettuce, Radishes, &c., not dear at	0 2 6
	£1 12 7		£2 13 0½

* There is nearly a fortnight difference between these varieties, Prolific being the earliest. If sown in or after April the varieties are only eleven weeks from sowing to the pods being fit to gather. We have allowed for the time of the year in all cases.

Edging of Chamomile, Mint, Thyme, or what not.	
Early Celery.	Early Prolific Peas.
Early Celery.	Sangster's No. 1.
Early Celery.	Ditto.
Celery.	Bishop's Longpod.
Celery.	Scimitar.
Celery.	Veitch's Perfection.
Spinach, followed by Greens.	Ditto.
Lettuce, followed by Greens.	Flack's Victory.
Lettuce, followed by Greens.	Alliance.
Lettuce, followed by Greens.	Perfection.
Lettuce, followed by Greens.	Ditto.
Early Cauliflowers.	Hair's Mammoth.
Early Cauliflowers.	Prizetaker.
Early Cauliflowers.	Bishop's Longpod.
	Eclipse.
Edging of Parsley.	
18 feet.	

Row of Strawberry.

A friend tells me that he used to spend at least 3d. every night, often more, on a friendly glass, and every Saturday night over rather than under a shilling. By chance he took a house with a bit of garden ground attached to it. He had now what he never had before—something to employ his time. Well, he accidentally fell in with an advertising sheet of *THE COTTAGE GARDENER*, and nicely asked the gardener to lend him a copy. He says he read all of it, and found what he wanted—what, when, and how to sow and plant, in Mr. Keane's weekly calendar. Unlike us gardeners, he did not wait until his employer bought him a copy, but ordered one at once. The other side of the picture is soon told. He spent his time and hard-earned money in his garden, learnt to see more beauty in nature than the beer-shop, and spent his evenings at home.

It was uphill work for a time, weeds were troublesome, land was poor; but now, in his own words, "I am a member of the Mechanics' Institute, have a few cocks and hens, a nice profitable garden, a Fern-case made on winter nights, and a little greenhouse." For what? "The money that used to go in drink." And, he added after a pause, "I have a few pounds in the post-office saving's-bank." With this case before me, I will uphold gardening to be a most profitable business. No matter what the crop, I consider it can be cheaper grown than bought. Digression upon digression must continue no longer, and I return to my theme.

One quart of early Peas will sow a row 15 yards long, and of Marrows 20 yards long. It is a bad practice to allow Peas to grow too thickly, but a good plan to sow thick rather than thin; for in one case it is an easy matter to thin, whilst in the other the crop is lost. My advice is, Sow moderately thick in all instances, and so be prepared for the enemies and adverse climate that may thin the crop. Mildew, however, is engendered by allowing the Peas to stand too thickly, and the yield is not so good from thick as from those moderately thin. A small grub very often attacks Peas in the pod; but I am no entomologist, and I only know that the sparrow is the best cure for it. A pod that we think has nothing in it of a hurtful nature the sparrow will open and take the grub out, and because he does this he must be destroyed by the sparrow-club members! Can any entomologist throw light on the cause of old Peas being infested by a small weevil, which completely destroys their vitality? and does the grub in the peapod change to the weevil that destroys the Pea in its dry condition? Information on this subject would, I think, be acceptable to more than one reader of this Journal. Old Peas never ought to be sown; they come up weak, and are more liable to mildew and to be eaten by grubs than new seeds. Steeping Peas in water before sowing we do

not like, for no amount of steeping will cause them to vegetate if sown in dry soil; and, depend upon it, if the Pea seeds required a morass to vegetate in we should find more of the Pea family by the side of swamps than we do. A far better plan than steeping Peas is to water the drills after the Peas are sown, and then cover up, and no amount of drought will then prevent those Peas from germinating.

Before quitting Peas in small gardens I should like to say a few words on another cause that hinders cottagers from growing Peas even in the country—the difficulty in procuring pea-sticks. Although noblemen and gentlemen are liberal in providing allotment gardens for their poor tenants, I must say they are very niggardly—at least their servants are—over a few pea-sticks. I have seen thousands of cords of brushwood lying rotting in the woods, and known every applicant to be denied taking a few by the steward who had control over them. I am firmly persuaded that if our worthy landowners were aware that a few pea-sticks would contribute to the happiness of the cottager they would as freely give them as they do their customary Christmas gifts. We do not ask leave for people to go when they please into game-covers disturbing the game, but that they may be allowed to take a few when the woodman plies his axe.

I speak from experience on this subject; for the first Peas that I ever grew were when I was a lad at home. Very good were they, as everything won with difficulty is. My father could not spare the land—he wanted it for something else; hares and rabbits would eat them, and the land would not grow them. But I set my mind on having them, and I remember my grandfather giving me sixpence to buy a pint of "Poor Man's Profit." I went to York, a distance of seven miles, and asked a nurseryman (Mr. Clarkson, who lived in Fulford Road), to supply me with the famous Poor Man's Profit. He gave me a pint of Blue Prussian for 3d., and I went home and sowed them that night. An old gardener told me to dig-out a trench, and put some manure in as I would for Potatoes, cover with a little soil, and then sow the Peas upon it. In nine days my Peas were up—April-fools-day—and as soot was placed round some Cabbages near, I put some round my Peas. No snail or hare touched them; and hearing some farmers telling what a famous thing guano was for making crops grow, I thought I would try it. My father had a few bags of the best Peruvian, and I just "forgot" to give a Potato-row its due share. This was sprinkled over the Peas, a smart shower afterwards saved the back of the purloiner, and in a few days my Peas were 6 inches high. They wanted sticking, but where were the sticks? In a plantation adjoining were fir-branches enough to stick an acre; but the keeper would not give me any. Every branch and twig had a pheasant's nest under it! A farmer at last gave me leave to cut some willow branches out of his trees. Slasher in hand, I had the branches quick, dressed, put in, and before I had done I fancied the tendrils had begun to twist round them, and the Peas had grown "ever so much." What a fine row and fine bloom had I! And, best of all, that very year my mother's birthday fell on a Sunday (July 11th), when we had a famous boil, and shall I say a treat? No, not one, nor two, but nine pecks from a nine-yard row! Thus I learnt to grow Peas on a small scale, and knowing some of the difficulties under which cottagers labour, I have endeavoured to pave the way for their removal. I shall not be so particular about the other two classes, as it is expected many of those know considerably more than myself. Suffice it to say I noted how to grow them in a twelve-acre field, have sown them in a gentleman's kitchen garden by the half-acre and one-eighth of an acre.—G. A.

(To be continued.)

RIBSTON PIPPIN TREES CANKERING.

IN No. 115, one of your correspondents asks if Apple trees of this excellent sort can be cultivated without that terrible disease, canker. I reply, Yes. My Ribston Pippin and Nonpareil Apple trees, two sorts notoriously addicted to canker, are growing and doing well, without a spot of canker upon them. They were planted seven years ago where they now stand, in a heavy, cold, wet soil, purposely selected, and the only peculiar culture they have received has been taking them up every alternate year in November, cutting-off closely any roots inclined to perpendicular growth, and carefully replanting, spreading all the young roots so as to lie near the surface, and giving to each tree two shovelfuls of manure spread on the surface round the stem. As a dry

season sometimes follows the removal year it is prudent to have your trees alternately removed, so that if six trees are planted three should be moved, say, in 1865 and three in 1866; you will thus have three trees established and three as little liable to being affected by their removal the previous autumn; but this, of course, depends much upon the nature of the soil and the season.—T. R.

THE ROYAL BOTANIC SOCIETY'S SHOW.

JUNE 24TH.

THIS was the last Show for the season at the Regent's Park, and it was fully equal if not superior to any of its predecessors; and the weather being favourable, though giving every token of an approaching thunderstorm, there was a large attendance of visitors. A storm, in fact, did come, but not till the great majority of the company must have reached their homes—then, in some parts round London, flash and peal followed each other in close succession, and the rain fell in torrents.

Stove and Greenhouse Plants constituted a principal feature of the Show, and of these numerous fine collections were exhibited, including most of those which were at Kensington in the previous week. By far the finest was that of date from Mr. Whitebread, gardener to H. Colyer, Esq., of Darford, the plants which he exhibited being equally remarkable for their great size and the abundance and beauty of their flowers. Particularly noticeable among them were *Ixora javanica* and *Pleoma elegans*, both of immense size, and the flowers of the latter, from their fine mauve purple colour, excited general admiration. There was also a remarkably fine *Erica Cavendishii*, though rather past its best as regards flowers. *Polygala Dalmaniana*, *Rondeletia speciosa*, and *Vinca alba rosea* were likewise very fine. Mr. Peed was second; his *Erica Parmentieriana rosea* was a blaze of the deepest rose-coloured bloom; in his *Allamanda grandiflora* was covered with numerous flowers; and, besides these, he had *Ixora salicifolia* and others, which formed part of the fine collection which he previously exhibited. Mr. Green was third; his *Erica obobata* was a splendid specimen, and his *Azalea Extranee* and *Juliana* were densely clothed with bloom. Mr. Baxendine, who was fourth, had in his collection *Camptretum purpureum* and *Bignonia grandiflora*.

In the Nurserymen's Class of ten Messrs. J. & Fraser were first; and here the two *Kalosanthes*, *Angelina* and *punicus*, lent a rosy tinge to the whole of the plants, in which were included a fine *Stephanotis*, and an *Ixora javanica* with some very large heads of flowers. Mr. Outbush, of Barnet, was second; Mr. Rhodes third. In the Amateurs' Class for a like number, Mr. Chilman came in first; included among his plants were *Erica Cavendishii*, fine *Aphelexes*, *Dipladenia cassiniana*, and *Hedera tulipifera*. Mr. Ingram, gardener to J. J. Blandy, Esq., Reading, was second, having *Hemantthus punicus*, the yellow scarlet flower-heads of which were striking; his *Pinelea mirabilis* and *Rhynchospermum jasmimoides* were also fine. In collections of six the first prize was gained by Mr. Page.

Plants remarkable for their foliage were contributed by Mr. May, gardener to T. P. W. Butt, Esq., of Arle Court, Cheltenham, who had the same immense specimens shown last week; by Mr. Hutt, of Highgate, among whose plants were a magnificent *Dicksonia antarctica*, a large *Latania borbonica*, *Alsophila australis* very large and fine, *Rhopala corcovadensis*, and *Alcacia metallica*; and by Mr. Taylor, of Highgate, in whose collection were *Dion edule*, *Encephalartos latifrons*, *Chamaecrops humilis*, and *Cycas revoluta*. Mr. Wheeler had likewise an excellent collection.

In the Nurserymen's Class for the same description of plants, remarkably fine collections came from Messrs. A. Henderson and Co., and Mr. Bull. The former had *Alcacia macrorrhiza variegata*, *Jacaranda filicifolia*, *Croton variegatum pictum* and *angustifolium*, *Caladium Chantini*, *Dracena ferrea*, *Maranta variegata*, and some others, whilst Mr. Bull had a *Rhopala corcovadensis* which reached to the top of the tent; *Tubianthus calyptratus*, also of very large size; *Araucaria Bidwillii*, *Pandanus javanicus variegatus*, *Hippomane longifolia*, *Areca rubra*, *Latania borbonica*, and *Yucca aloifolia variegata*. The plants in both collections, it is almost unnecessary to remark, were of large size, and without exception in excellent condition.

Cape Heaths were shown in abundance and great beauty, some of the most conspicuous being *Bergiana*, naturally a free-flowering kind; *ventricosa superba*, *grandiflora*, *Bothwelliana*, and *magnifica*; *Aitoniana turgrida* and *Turnbulli*, *Messoni*, *nobilis*, *obobata*, *Candolleana*, *Spenceriana*, and *metuliflora bicolor*.

Messrs. Jackson & Son were first in the Nurserymen's Class for ten, Mr. Rhodes second; and in the Classes for eight and six plants, first prizes were awarded to Mr. Peed and Mr. Chilman, and second to Mr. Page and Mr. Ingram.

In Orchids, of which there was a good display, there was nothing in the various collections much different from what has been previously noticed.

In collections of twenty, Mr. Baker was first, and Mr. Milford second, the latter having an extremely fine *Vanda tricolor superba*, and *Cypripedium villosum*, also fine; and in twelve Mr. Penny and Mr. Woolley had first, and Mr. Green and Mr. Page second prizes.

Of Ferns, excellent collections both of exotic and British were shown by Mr. Lavey, of Fetcham, and of the former by Mr. Bull, and Messrs. A. Henderson, the plants in the last two exhibitions being the same as those noticed last week as being shown at Kensington. Messrs. Ivory and Miss Clarkson had also collections of hardy Ferns. Some fine pans of *Lycopods* were likewise shown by Mr. Lavey, and by Mr. Young, of Highgate.

Euchais were exhibited by Mr. Gardener, of Clapham Park, Mr. Cannell, Mr. Green, and Mr. Weston, who received prizes in the order in which their names stand. Mr. Gardener had Senator, Madame Cornelissen, Prince Imperial, Rose of Castille, Isa Craig, and Fair Oriana, all of which were handsomely grown, and in fine bloom.

Mr. Cannell's plants were—Always Ready, Reine Blanche, Prince Alfred, Lord Elcho, Schiller, and Madame Cornelissen. Mr. Green's were larger but not so compact, and among them were *Souvenir de Chiswick*, *White Lady*, *Lord Clyde*, and *Masterpiece*.

Pelargoniums both Show and Fancy varieties were of surpassing excellence. The best in the Nurserymen's Class of twelve were from Mr. Turner, of Slough, the kinds being *The Belle*, *Ostris*, *Marie*, *Bijou*, *Glowworm*, *Bacchus*, *Ariel*, *Nestor*, *Viola*, *William Bull* (a glowing carmine), *Perdita*, and *Spotted Gem*. Messrs. Fraser were second.

In the Amateurs' Class of ten nothing could be finer than the plants exhibited by Mr. Nye, gardener to Miss Foster, at Clewer, and which consisted of *The Belle*, *Ariel*, *Ursula*, *Golden Hue* (splendid), *Perdita*, *Viola*, *Empress Eugénie*, *Eastern Beauty*, *Bacchus*, and *Matilda*. Mr. Wiggins, gardener to W. Beck Esq., Isleworth, was second with some nice plants.

In Fancies, Mr. Turner and Messrs. Fraser were equal first in the Nurserymen's Class. The kinds shown by the former were *Cloth of Silver*, *Delicatum*, *Sarah Turner*, *Cheerfulness*, and *Claudiana*, all of them splendid plants; whilst Messrs. Frasers' were *Delicatum*, *Cloth of Silver*, *Acme*, *Bridesmaid*, *Marionette*, and *Arabella Goddard*. In the Amateurs' Class Mr. Bailey, of Shardeloes, was first with *Crystal Beauty*, *Negro*, *Lady Craven*, *Arabella Goddard*, *Rosabella*, and *Musjid*, all of which were exceedingly fine; as were also those from Mr. Shrimpton, who was second.

Prizes were offered for Pelargoniums, the test merit in which was to be health, large size, and abundance of bloom, and the highest award was made to Mr. Nye, gardener to Miss Foster, for truly magnificent plants, some of which could not be less than 4 feet across. They were *Viola*, *Desdemona*, *Sanspareil*, *Bracelet*, *Fairest of the Fair*, and *Sir C. Campbell*. Some large and well-grown plants of *Scarlet kinds* were also shown, as well as several collections of Pelargoniums sent out in the autumn of 1861, or since, in which Mr. Turner was first, Messrs. Fraser second, and Mr. Wiggins third. Mr. Turner's were *Novelty*, *Fair Rosamond*, *Royal Albert*, *Timon*, *Celeste*, and *Lord Chancellor*.

Cut Flowers, principally Roses, constituted an exhibition of themselves. For fifty Roses, Mr. Turner had first prize for a splendid collection, awards being also made to Mr. Mitchell, of Piletdown Nurseries, and Messrs. Paul & Son. Miss Crawshaw, of Caversham Park; Mr. Terry, of Youngsbury; Mr. Turner; Mr. Hollingworth, of Maidstone; and Messrs. Paul and Son were likewise successful exhibitors in other classes; and Mr. Francis, of Hertford, with pot Roses on the *Manetti* stock. Pinks were shown by Messrs. Turner, Bragg, Parker of Walthamstow, and Hooper of Bath; Pansies by Messrs. Downie, Laird, & Laing, Bragg, August, Fraser of Edinburgh, and others. There was likewise a good show of *Verbenas* from Mr. Turner, Messrs. Perkins, and Mr. Perry of Castle Bromwich. Messrs. Barr & Sugden had *Iris*, early *Gladioli*, and *Ixia*. Some *Sweet Williams* were also staged.

Among Miscellaneous Plants, many new ones were exhibited which have been already noticed in our columns, such as Messrs. Veitch's handsome *Cyanophyllum*-like *Spharogynis latifolia*, *Miconia pulverulenta*, and the blotched-stemmed *Alocasia zebrina*. They had besides a new and very ornamental *Escallonia* from Chili, of free-flowering habit, and which may prove hardy; also, the new Ferns *Selliguea pithiifolia*, and *Alsophila Tenaxis denticulata*, a crested form of *Pteris serrulata*, a hybrid *Cattleya* between *Loddigesi* and *Acklandiae*, *Paneratium amboinense*, the variegated *Rhynchospermum*, &c. Mr. Williams, of Holloway, had a collection of fine-foliated and new plants, in which were *Cibotium Schiedei*, *Gleichenia semivestita*, *Agave filifera*, *Pandanus reflexus*, and *Guzmania picta*; also, his new *Cyrtopodium Stonei*. Mr. Bull contributed the handsome new *Athyrium filix-femina diffusum*, *Centaurea argentea*, the Golden-powdered *Gymnogramma Lauchiana*, *Latania Verschaffelti*, *Sparkler*, and other new *Mimulus*; also, his new *Pelargonium* and *Petunias*.

Messrs. Low & Co. had the handsome *Alocasia Lowii*, also *Dendrobium Parishii* and *nodatum*; Messrs. Ivory & Son, *Athyrium filix-femina glomeratum*; Messrs. Carter, Snowball *Geranium*, white; Mr. Turner, *Bougainvillea*; Messrs. Henderson, *Mimulus*, *Centaurea argentea*, and an interesting collection of *Ivies*; and Mr. Standish, his beautiful new *Deutzia*, *Lychnis Senno*, and other new Japanese plants.

FRUIT.

The exhibition of Fruit was very extensive and generally excellent. Pines were both numerous and of large size; and of Peaches and Nectarines there were many remarkably fine exhibitions besides those which received awards. The most defective part of the Fruit Show was the collections, not one of which was up to the mark.

Mr. Kuffert, gardener to Lord Palmerston, was first with Black Hamburg and Muscat Grapes, a Melon, a Pine, Elruge Nectarines, Galande Peaches, and Lee's Perpetual Figs. Mr. Henderson, of Trentham, was second with four Pines, Trentham Black and Buckland Sweetwater Grapes, two Melons, Royal George and Violette Hâtive Peaches, Violette Hâtive Nectarines, Circassian Cherries, Brown Turkey Figs, and some inferior Strawberries. Mr. Young, of Havart; Mr. Masters, of Sherburn Castle; and Mr. Turnbull, of Blenheim, were the only other competitors.

Of Figs, excellent collections of four and more fruits were shown by Mr. Young, of Aberaman, and Mr. Bailey, of Sharncliffe, among which were two Providences, from Mr. Young, of 9 lbs. 6 ozs. and 8 lbs. 11 ozs. respectively, and several Queens weighing more than 4 lbs. In Providences, Mr. Young had an immense fruit of 11 lbs. 6 ozs., but which being over-ripe had to be passed over in favour of one weighing 8 lbs. 3 ozs. from Mr. Cawhill, of Tickhill. Mr. M. Henderson, of Coleorton Hall, had one of 7½ lbs., which stood next on the prize list; and Mr. Muggleton, gardener to W. Cubit, Esq., Andover, had also a fine fruit. Mr. Hall, gardener to Lord Scarborough, had five fine Queens, one of which weighed 4 lbs. 11 ozs.; Mr. Smith, of Norwood Grove, one of 4½ lbs. Fine fruit of the same kind were likewise shown by Mr. Moore, of Redland Lodge, Bristol, and Mr. Young, of Aberaman, the latter having also an Enville of 7 lbs.; whilst Mr. Bailey had Prickly Cayennes, an Enville, and Lemon Queen; Mr. Chalmers of Drayton Manor, a fine Moscow Queen; and Mr. Taylor, of Temple Newsum, a very good Black Prince.

Melons were extensively shown, and both as regards appearance and, we believe, flavour, were excellent. The best in the Green-fleshed class was a hybrid Persian from Mr. Meredith, of Garston; King's Green-flesh from Mr. Tegg, was second; and in Scarlet-fleshed kinds Mr. Chilman had first prize; the second being awarded to Mr. Mounsden, of Moreton Hall, Congleton, for a kind called Moreton Hall.

The display of Grapes was not only large, but of great excellence. In three dishes of distinct varieties by far the finest were those from Mr. Hill, of Keble Hall, which had Buckland Sweetwater, Black Hamburg, and Black Prince; all were fine, but the bunches of Black Prince were magnificent, the finest of the three was not less than 20 inches in length, compact, even in size of berries, perfect in colouring, and covered with a beautiful bloom. Their weight was 9 lbs. 5 ozs. Mr. Henderson, of Trentham, was next with Black Hamburg, Victoria Hamburg (very fine), and Buckland Sweetwater. Mr. Peachy had Grizzly Frontignan, and Golden and Black Hamburg.

Several baskets were exhibited, the best being Black Hamburg from Mr. Meredith, weight 16 lbs.; the same kind, also very fine, from Mr. Hill, and Bailey's Muscadine from Mr. Bailey.

In Black Hamburgs, three bunches, Mr. Meredith was again first with splendid bunches and berries; and for Black Prince Mr. Hill had the highest prize for three bunches weighing 7 lbs. 12 ozs., and equally fine in appearance with those already noticed. For Muscats Mr. Turner had the first prize, the bunches and berries though fine were not ripe enough; and Mr. Turnbull, Mr. Embray, and Mr. Clements had also good exhibitions.

In the Any variety class, Mr. Hill had very fine bunches of Buckland Sweetwater, the three weighing 6 lbs., for which he had the first prize; Mr. Drewett, Chasselas Musqué; Mr. Peachy, White Frontignan; Mr. M. Henderson, Grizzly Frontignan; Mr. Smith, Norwood, Golden Hamburg; and Mr. Constantine, Chavoush. Fine but unripe bunches of the Black Alicante were also shown by Mr. Petch.

Peaches and Nectarines, as already observed, were extremely fine, and to particularise all that were worthy of notice would occupy more space than we can afford. Mr. Dawson, gardener to Earl Cowper, Panshanger, had Downton and Hunt's Tawny Nectarines, and Violette Hâtive and Galande Peaches, all of which were very fine. He received a first prize, the second going to Mr. Turner, of Slough. In two dishes, one of Nectarines and one of Peaches, the best came from Mr. Wills, of Oulton Park, consisting of Royal George Peach and Elruge Nectarine, both very large and perfection in ripening. Mr. Constantine, of Hillingdon Court, was second for Royal George Peach and Violette Hâtive Nectarine, which were also very large and fine.

Of other fruits, good Figs were exhibited by Mr. Smith, of Syon; Cherries, by Mr. Snow, who had Elton and Circassian, and by Mr. Turner, who had the latter kind; and Strawberries, by Mr. Widdowson, who had fine dishes of Empress Eugénie, Admiral Dundas, Sir C. Napier, and Sir Harry. Some excellent Vines in pots were shown by Mr. Stone, Mr. Young, of Highgate, and Mr. Humby, of Brentford; those of Mr. Stone in particular being very fine, and bearing good-sized bunches. Lastly, Messrs. Fraser had Peaches and Pears, and Messrs. Lane & Son Figs, Cherries, Apples, Pears, and Plums in pots.

PREPARING STRAWBERRY PLANTS FOR FORCING.

I INTEND potting some Strawberry plants from runners. Is it better to do so in small pots and repot into six-inch pots in the spring, or strike them from runners into six-inch pots at once, as the latter would save trouble if there is no disadvantage?—A. Z.

[Both modes are good in proportion to the management. We frequently ourselves take off the runners as soon as made, and the roots are shown in embryo, and plant about 3½ inches apart in light soil above a slight hotbed, and as soon as they form roots and balls, lift them and pot in six or seven-inch pots. Owing to the dry weather our runners are scarcely fit for using any way as yet, but in a week we hope they will be so. Of the two modes suggested by you—layering in a small pot, or layering in a large one at once, we prefer the first mode, and on the whole we do not think we incur more trouble or labour, whilst we think we obtain some advantages. By the small-pot process at first there is little primary care needed, whilst by potting at once in large pots much care in preparing the pots is necessary, if good success is to be obtained; and there is a great trouble in wheeling to and rewheeling from a quarter 32 or 24-sized pots instead of 60's.

Our general process is to take a barrow nearly filled with light loam and leaf mould, and the top filled with large 60 or 54-sized pots to the Strawberry-quarter, put a crock in the pot, fill with soil, and fasten the layer in the middle of the pot either with the fingers or by placing a pebble or good-sized crock over it. These fairly watered will soon fill the pots with roots, and when that is done the runner is cut, and the pots and plants wheeled to a shady place for a few days, in order that by watering and syringing they may get over the partial check of being severed from the runner. Then they are finally potted, using rather stiff rich loam, and placing the plant so that the bud shall be at least as high as the rim of the pot, and potting as firmly as fingers and

a wood rammer can make the soil. The two advantages of this plan are—first, the security that the bud or centre of the plant shall not be too much sunk, as in that case the plant will rarely fruit well; and, secondly, the making sure that the pot all through will be filled with fine fibry roots, so that the whole ball shall be matted with them; and thus the second potting disconcerts a natural tendency of the plant to send its roots at once to the sides of the pot, and to cluster there while the centre of the ball is comparatively free from fibres.

By the second mode—putting the runner at once in the fruiting-pot, there will be as much care required as in the second potting by the above mode, and thus at least at first and in the busiest season more of first trouble will be necessary. True, we have seen thousands so done without much trouble. The pots (large 32's) were taken to the place and drained, the plant placed on the surface of the soil, growing well, making fine foliage, and moved some time in autumn, with the runner a rather nice plant sunk down an inch or two or more below the rim of the pot, and all looked nice, though we seldom heard much of their wonderful fruitfulness. The mode by which we have succeeded best by the at-once-layering in the fruiting-pot, is as follows:—The pot was suitably drained, a little moss and soot placed over the drainage, and the soil packed in firmly, leaving a small cone a little loose on the surface for the runner, that cone being from half an inch to an inch above the rim of the pot, for before autumn the soil would have sunk, perhaps, half an inch below it. So treated these plants did well, though not better or hardly so well as those laid in small pots and again repotted. Our chief reason for not following the plan often is, the much greater time and trouble it takes for securing rooted plants in the first instance, and that at a season of the year when it is a serious question to decide what should be done first. By the period the layers need repotting we generally have a little more breathing time. If our correspondent "A. Z." decides on the layering in the fruiting-pot at once, we would draw his attention to the above conditions; if he layers in a pot filled lightly with soil, we would not hold out great hopes of a fine crop. We have seen hundreds of instances in which such quick work was done, and other more tedious processes decried, but we have heard few boastings at gathering-time under such circumstances, and especially if the fruit was wanted at all early.—R. FISH.]

CRYSTAL PALACE ROSE SHOW.—JUNE 27.

If any doubt could have existed as to the increased and increasing popularity of the queen of flowers, such doubts would have been inevitably removed at the sight which the frequenters of the Crystal Palace were permitted to witness. Whether one looked at the vast number of entries, especially amongst amateurs, amounting in some of the classes to upwards of thirty stands, or the immense crowd of people assembled to see them, it must surely be conceded that no flower is so universally admired or more widely grown than the Rose. And notwithstanding the awful thunderstorm which swept over the south and east of England on Wednesday night, shattering the hopes and the Roses of many an exhibitor (for many who had given notice were unable in consequence to attend), and severely injuring others that were exhibitors, I think one can safely say that, although there have been years when many much finer Roses have been exhibited, yet on the whole the collections were in fair average condition, while some of the blooms were of surpassing excellence. The backwardness of the season, too, was against them; for although we have had almost forcing weather for the last ten days, yet until then Roses were in some districts not in bloom. My esteemed friend, Mr. Hole, told me on the 17th he had not any in bloom save Gloire de Dijon; and Mr. Paul of Cheshunt, and Mr. Francis of Hertford, both complained to-day of the backwardness of their flowers; it was, however, a most grand display, and their fragrance, freshness, and beauty well merited the superiority of her floral majesty.

Amongst the first questions asked at a Rose show is, Which is the best new Rose? and hence the boxes of new flowers of 1861 and 1862 first claim a notice. There were, from whatever cause, not any finely exhibited. There were only three stands, and in one of them hardly a new Rose of last autumn was to be seen. The same causes which affected the general aspect of the Show may have been at work here, and we may, perhaps, look to see them better a little later. The first prize was awarded to Messrs. Paul & Son of the Old Nurseries, Cheshunt, for Peter Law-

son (1862), a new Rose of promise; Souvenir de M. Rousseau; Wilhelm Pfitzer; Turenne, very bright; Duchesse d'Alençon, worthless; Lord Clyde (1862), a splendid bloom with fine foliage, decidedly the best new Rose exhibited there; Monte Christo; Louise Darzins, very white, but wants the substance of Mdle. Bonnaire; Paul Feval; Etienne Lecrosnier; Archevêque de Paris; Madame Caillat, bright, but thin; Prince Camille de Rohan, very dark, good; Gloire de Chatillon, will not do; Maurice Bernhardt, a fine Rose; Madame Helye, bright; Olivier Delhomme, very good; Professor Koch, double and good; Maréchal Vaillant, very bright; Souvenir de Comte Cavour (Margottin), very fine; Richard Smith; Vulcain, slaty; Le Rhone (1862), promises to be one of the best of the new Roses; Jean Gousson (1862); Triomphe de Caen; Beauty of Waltham, a fine Rose but soon flies; Princesse d'Orleans; Madame Charles Wood, a bright, large, and good Rose. Mr. William Paul was second, with Charles Lefebvre, good; Triomphe de Caen; Turenne; Madame Caillat; Wilhelm Pfitzer; Duc de Rohan, good; John Cranston (Moss); Gloire de Chatillon; Christian Püttner, good; Souvenir de Lady Eardley, good, but not in character; Emile Dulac, pretty imbricated Rose; Professor Koch; Seedling Mdle. Emain; François Lacharme, very fine and good, one of the best of the Roses of 1861; Reynolds Hole, bright pink; Vulcain; Comtesse de Seguier; Prince Camille de Rohan; André Desportes, good; Souvenir de Comte Cavour; Beauty of Waltham. Mr. Standish was third, with Madame Charles Wood; André Leroy (1862), good; Madame Standish; Mrs. Dombrain (1862); Vulcain; Vicomte Vigier; Turenne; André Desportes; Grégoire Bourdillon; J. F. Lombard (1862); Madame Boutin, Reynolds Hole, and Souvenir de Comte Cavour.

It is, I believe, hardly worth while to give in so large a number as ninety-six varieties the names of the flowers in each winning-stand. I believe that while the best flowers are generally selected for these stands, the more generally useful ones are in those of smaller numbers. I shall, therefore, simply give the names of the most remarkable flowers in the two winning-stands. The first prize was awarded to Mr. J. Mitchell, of Pitdown Nurseries, near Uckfield, Sussex, and amongst his flowers I particularly noticed Prince Imperial, Duc d'Ossuna, Madame Caillat, Madame Charles Crapelet (a beautiful bloom), Souvenir de Comte Cavour, Evêque de Nîmes, Catherine Guillot, General Washington (a beautiful bloom), Homère (a fine Tea), Paul Ricaut, Louis XIV, Sénateur Vaisse, Triomphe de Rennes, Général Jacqueminot, Gloire de Dijon, Souvenir de la Malmaison (very good), Peter Lawson, Comtesse de Chabillant, and W. Paul (1863, a very promising Rose). Mr. C. Turner, of Slough, was second. His best blooms were Paul Ricaut, Baron Gonella, La Brillante (very fine), Souvenir de l'Elise, Madame Willermoz, Jules Margottin, Professor Koch, Narcisse, Anna de Diesbach, Niphotos (a splendid bloom), Madame Charles Crapelet, Céline Forestier, Madame Furtado (excellent), Souvenir de Comte Cavour (a wonderful bloom), Louis XIV (very fine), Darzins, Coupe d'Hébé, Mrs. Rivers, Vicomte Vigier, François Arago, and François Lacharme.

In Class 2, forty-eight varieties, three trusses of each, the first prize was awarded to Mr. B. R. Cant, of Colchester, for Mathurin Regnier, Grégoire Bourdillon, Jules Margottin, Madame Willermoz, Souvenir d'un Ami, Olivier Delhomme, Eugène Appert, Comte de Paris, Baronne Prevost, Comte de Falloux, Général Jacqueminot, Comtesse de Chabillant, Pauline Lanzezeur, Adam, Victor Verdier, Madame Bravy (fine Tea), François Lacharme, Orderic Vital, Lord Raglan, Wm. Griffith, Charles Lawson, Souvenir de M. Rousseau, Sénateur Vaisse, Mrs. Rivers, Anna de Diesbach, Duchess of Norfolk, Monte Christo, Bougère, Rubens (a very fine Tea, exhibited in several stands to-day), Duke of Cambridge, Lælia, Madame Boll, Victor Trouillard, Madame Knorr, François I., Madame Domage, Paul Ricaut, Modèle de Perfection, Devoniensis, Empereur Napoléon, Triomphe de Lyon, Souvenir de Comte Cavour, and C. Lefebvre (very fine).

Mr. Charles Turner, of Slough, was second, with Général Jacqueminot, Comtesse de Chabillant, Gloire de Dijon, La Ville de St. Denis, Madame Charles Wood, Baronne Prevost, Géant des Batailles, Madame Vidot, Eugène Appert, Souvenir de Comte Cavour, Madame Bravy, Jules Margottin, Madame Guinnoisseau, Devoniensis, Alphonse Damazin, Triomphe de Rennes, Anna Alexieff, Catherine Guillot, François Arago, Victor Verdier, Louis XIV., Vicomte Vigier, Coupe d'Hébé, Madame de Cambacères, Souvenir d'un Ami, La Brillante, Duchess d'Orleans, Madame Knorr, Jean Bart, Evêque de Nîmes, Madame C. Crapelet, Céline Forestier, Modèle de Perfection.

tion, Paul Ricaut, Lord Raglan, Mathurin Regnier, Narcisse, La Reine, Senateur Vaisse, Wm. Griffith, Buffon, La Fontaine.

In Class 3, twenty-four blooms, three trusses of each, Mr. Francis, of Hertford, was first with Colonel de Rougemont, Jules Margottin, Eugène Appert, Mademoiselle Bonnaire, Louis XIV., Madame Boll, Anna de Diesbach, Général Jacqueminot, Charles Lawson, Souvenir de la Malmaison, La Reine, Catherine Guillot, Anna Alexieff, Mrs. Rivers, Senateur Vaisse, Victor Verdier, Wm. Griffith, Paul Perras, Paul Ricaut, Gloire de Dijon, Lord Raglan, Baronne Prevost, Géant des Batailles. Messrs. Paul & Son were second with Paul Perras, Senateur Vaisse, Victor Verdier, Parmentier, Mathurin Regnier, Triomphe des Beaux Arts, Madame Caillat, Triomphe de Paris, Anna Alexieff, Lord Clyde, Général Jacqueminot, Mdle. Bonnaire, Général Castellane, Transon Goubault, Jules Margottin, Madame Charles Wood, Madame Boll, La Ville de St. Denis, Comtesse de Barbanne.

In Class 4, twenty-four varieties, one of each, Mr. W. H. Treen, of Rugby, took first with Baronne Prevost, Général Jacqueminot, Louis Buonaparte, Anna Alexieff, Paul Ricaut, Lord Raglan, Brennus, Lanei (Moss), Madame Helye, Mrs. Rivers, Senateur Vaisse, Coupe d'Hébé, Sidonie, Gloire de Dijon, Eugène Appert, Jules Margottin, Charles Lawson, Reynolds Hôle, Empereur de Maroc. Mr. C. Turner took first in twelves.

I must pass on to the Amateurs, who came out nobly, both as to the number and blooms, Mr. Hedge, of Colchester, still bearing all before him, obtaining three first prizes and one third with some excellent flowers, but on the whole not quite up to what he had last year. Of the thirty-six varieties I have no note, but in twenty-fours he had Comtesse de Chabillant, Madame Vidot, Rubens, Madame de Cambacères, Leo X., Comtesse de Kergorlay, Madame Boll, Triomphe de Lyon (Tea), Madame Maason, Coupe d'Hébé, Senateur Vaisse, Mrs. Rivers, John Hopper, Gloire de Dijon, La Reine, L'Enfant Trouvé (grand), Paul Ricaut, Letitia, Lord Raglan, Jules Margottin, and Cynthée.

In Class 8, Mr. Hedge was again first with Comtesse de Chabillant, Madame Vidot, Charles Lawson, Adam (very fine), Madame de Cambacères, Souvenir d'un Ami, Boula de Nanteuil, L'Enfant Trouvé, Jules Margottin, Mrs. Rivers, Madame Maason, Rubens, Madame Boll, Gloire de Dijon, Lord Raglan, La Fontaine, William Griffiths, and Madame Sertot, Mr. Ingle, gardener to C. G. Round, Esq., of Colchester, was second, with Pauline Lanzeur, Devonians, Col. de Rougemont, Jules Margottin, Anna Alexieff, Elise Sauvage, William Griffiths, Gloire de Dijon, Prince Léon, Imperatrice Eugénie, Eugène Appert, Madame Furtado (splendid), Baronne Prevost, Général Jacqueminot, Souvenir de la Malmaison, and Comtesse de Chabillant.

In Class 9, twelve blooms, the first prize was obtained by a new competitor, Rev. V. Knox Child, of Dunmow, with Madame Knorr, Madame C. Crapelet, Victor Verdier, Napoléon, Comtesse de Chabillant, Senateur Vaisse, Souvenir de la Malmaison, Jules Margottin, Gloire de Dijon, Général Jacqueminot, and Triomphe de Lyon. The second by Mr. Pullinger, gardener to F. G. Wilkins, Esq., Leyton, with Louis XIV., Gloire de Dijon, Madame Boll, Madame Guinnoisseau, Madame Bravy, Comtesse de Chabillant, Madame Rivers, Senateur Vaisse, Victor Verdier, Gén. Jacqueminot, Baronne Prevost, and Turenne.

There were several objects of interest, but my hand tires and my head wears, and so, with many a pleasing thought of a hard day's work, I must draw to a close. I cannot do so without again saying that the comfort of all concerned was amply provided for by the Company, and that the indefatigable exertions and constant courtesy of Mr. Houghton, were again rewarded by a most brilliant and successful Show.—D., *Deal*.

Prizes were offered in Class 11 for thirty trusses arranged for table decoration; Mr. Turner, Mr. Hedge, and Mr. Cranwell, Penge, were the successful prizetakers. However Roses are employed for decorative purposes, the effect is seldom otherwise than pleasing, and these arrangements certainly were so; but though the stands varied considerably in character, there seemed to be too much of sameness in the mode in which the flowers themselves were disposed.

In Class 12, Mr. W. Paul had the first prize for twelve varieties of pot Roses in large pots. Among them were included magnificent plants of Lælia, La Reine, Madame de St. Joseph, Gloire de Dijon, Coupe d'Hébé, and other kinds which that distinguished cultivator has so successfully exhibited this season.

In the next, Class 13, for twenty-five Roses in eight-inch pots,

he had also first prize, a similar award being made to Messrs. Paul & Son; and a second prize to Mr. Turner.

Some miscellaneous objects were also shown, among which were included a Cucumber, called Paul's Emperor, from Mr. W. Paul; fruit trees in pots from Messrs. Lane; Irises from Messrs. Barr & Sugden and Butler & McCulloch; double dwarf Poppies, which might easily be mistaken for Hollyhocks, from Hooper and Co.; also a fine stand of Pinks from the same. Messrs. F. & A. Smith had in addition Fuchsia Pillar of Gold, with yellow variegated foliage; Messrs. Downie, Laird, & Laing, Antirrhinums, Pansies, seedling Phloxes, &c.; and a Japanese flax for tying purposes came from Mr. Allison, of Laurence Pountney Lane, City.

PRUNING AND MANURING ROSE TREES.

SOME time ago Mr. Beaton gave your readers some advice respecting the treatment of Roses raised from cuttings, which he said should be cut down in the June after they were planted out, to encourage the growth of one or more strong shoots from near the ground. I have already tried this advice on half-a-dozen plants, and with complete success so far, for they have thrown-out very strong shoots, some from 8 to 10 inches long, and very robust.

Now, I want to know how I am to treat them when they are full grown. I suppose they are to be headed-down, but at what height, and whether are they to be trained as standards or as bushes?

May I also ask what manure is best for Roses where neither stable nor farmyard manure is available? I am in the habit of collecting all the weeds, leaves, stalks and other vegetable refuse of my garden, and mixing it with lime: would this suit Roses? Would it be improved by the addition of a little salt? My soil is a stiff loam on yellow clay.—S. M.

[You do not say what your Roses are—Perpetuals, Bourbons, Chinas, or Teas. Mr. Beaton intended Rose trees from cuttings to be treated as dwarfs; for we never knew him recommending any one to put Roses on stilts, as is the fashion now-a-days. He always advocated that there was no stock good enough for the queen of flowers, nor any root so likely to feed it as its own.

Presuming your Roses are Perpetuals, you must cut a strong shoot down to five eyes, and a weak one to three, always cutting very weak shoots close off. You must not allow any shoot to overlap another; keep the centre of the tree somewhat open, and so arrange the shoots that next year's growth will form a compact bush. In future years the shoots may be cut down to a couple of eyes, or if you want size, to five or six. If you would prefer a pyramid, and they are handsomer than standards, choose a strong shoot in the centre of the tree, and if the tree has three or more shoots over and above the centre shoot cut them to six eyes each, and the centre one to four. All this pruning should be done as soon as the trees are leafless or from that to the middle of March. In July stop the centre shoot and the side shoots from the leader of the previous year to six leaves; but the lower shoots must not be stopped at all—they cannot be too vigorous, yet as you will have six shoots on each branch, reduce them to three, taking away the two lowest and every other afterwards. Should the leader break strongly after stopping, stop it again at the fourth joint, and so on. In the autumn you will have the basis of a pyramid, and you will then prune the centre shoot or leader to eight eyes, take three of them away in spring, and stop the leader the same as the year before, so as to encourage the side shoots to make good wood. All the other shoots should be cut to two or three eyes according to their strength, taking care to prevent crowding, and to admit plenty of light and air into the centre of the tree.

If you are anxious to have a standard, put a stake to one of the strongest shoots, removing all the others, and let it grow to the required height and as much longer as it may the first season. Cut the shoot down to the required height at pruning time, and in spring disbud the stem, taking away all the shoots except three at the top, or five at the most may be left. In summer stop any shoot that is more rampant than its neighbours, and in winter prune to five eyes the first, three the second season, and so on, always pruning so that a compact head will be formed. Standard Roses on their own roots would be quite a novelty, and if they are longer-lived than those on the Dog Rose it will prove a fact in gardening (as yet but asserted) worth knowing. After all your Roses may be Bourbons, but if they are the treatment recommended for Perpetuals

will suit them; strong growers of either require moderate, and weak growers close, pruning. China Roses do not require much pruning, but a thinning or regulating of the shoots. Teas, too, do not like the knife; they flower better with moderate than close pruning.

Under the circumstances we do not think you could have a better dressing for your Roses than decayed vegetable matter; a little Peruvian guano sprinkled around the trees in March would do them no harm; it would be washed down to the roots with the first strong shower, and they would not be long before they showed its effects. We never use salt, and we should be cautious about doing so. A little might do no harm, but we think anything like a large quantity would be hurtful.]

MIMULUS CUPREUS.

THIS recently imported plant is a gem in the class to which it belongs—an acquisition for small greenhouse and conservatory decoration. Let its bedding properties be what they may, owing to its slender and somewhat delicate habit I fear it would not stand well out of doors in this part of Ireland, although we have moisture enough, if that is of any advantage; and I likewise fear it will not be found to stand well in the south, if the seasons prove at all dry, for the *Mimulus*, delighting in plenty of moisture, nothing suffers so quickly from drought. Its cultivation is simple enough. Seed if sown in February and carefully attended to, will produce blooming plants by May. I purchased a packet of seed from a London house. The plants are now beautifully in bloom and promise to remain so for some length of time.

The three new kinds, crosses from *cupreus*, figured in last month's "Florist and Pomologist," without doubt are pretty; but in my opinion fall far short of the original, for which we have to thank the Messrs. Veitch.—JOHN EDLINGTON, *Crom Castle*.

DESTROYING INSECTS—DEODORISING.

RECENTLY you stated that soot (half a peck to twenty gallons of water), is good to wash trees and plants infested with insects. Do you prefer it to tobacco water? and does the latter, or Gishurst compound, or Neal's plant soap, injure the foliage or flowers of plants, as Geraniums, Calceolarias, &c., on which it falls? and can you recommend a wash to syringe Roses covered with green fly that would be effective and not injure the foliage and flowers beneath them?

Would a little chloride of lime take away the smell from liquid manure for in-door use? And if so what proportion should be put to a gallon and not to injure the plants?—H. G.

[The greater our experience the more fully are we convinced that the man who discovers any effective wash that will destroy all insects, and yet be perfectly harmless to plants, may soon, if he chooses, be able to ride in a coach and six, and have a mansion and establishment to match with such external grandeur. We have also proved repeatedly that what will destroy insects at one time will not do them much injury at another time, and hence the importance of not relying upon any one specific. Hence also the importance of using liquids which are distasteful to insects, and which will rather tend to increase the vigour of the plant than otherwise. Soot water of the strength mentioned above will not kill insects so effectually as tobacco water, if it be strong enough to kill at once, but it will be as effectual as very weak tobacco water. Our own experience tells us that tobacco water, strong enough to kill the insects at once, will also injure the shoots and foliage, and so with all the other things named—Gishurst and the rest of them. Careful people, therefore, prefer weaker doses repeated instead of a strong dose at once. We have cleared many Rose bushes of green fly with clear soot and lime water alone, and left no marks on the plants beneath them, and this could hardly be said of Gishurst or tobacco water. We have, moreover, seen days taken in dipping and washing shoots of Roses in tobacco and other waters, and the leaves getting almost as much injured as the insects; when the same time would have enabled a person to run his fingers along the shoots, crush all that came in his way, and then wash off all the remains either with clear soot water or clear soft water.

There is this objection to all washings—that some of the insects will most likely escape, and they will soon give you a fresh brood; and therefore smoking with tobacco is the most

certain cure, as the smoke will get into every hole and cranny. Even that, however, must not be too strong, continued too long, or presented in a hot state, or the tobacco may do more harm than the insects. A glazed cloth covering to put over bushes is a good mode for smoking them, only the smoke must be cool. The green fly is easily killed, but we have noticed the viviparous progeny come from the dead bodies of their parents, and thus, independently of eggs, occasioning fresh necessity for the smoke and the wash. Nothing that has come in our way equals in this respect the brown and black insects of the *Aphis persicæ*, and the evil is that they get in wood, on walls, in pots, in the earth anywhere and everywhere; and when you have settled one generation, in a short time you have several more to try your patience and resignation. On a hot day recently we found a hard gravel walk swarming with them. Last night we smoked them, and on examining an infested shoot with a microscope could not discover one alive. We placed the shoot and leaves in a cup, covered it up securely, and find that out of some hundreds two or three have recovered so as to be just sickly; many others that last night were plump and fat-looking are now thin and shrivelled as well as dead; but lots of little brown things are sticking about, too large to have come from eggs, and showing every sign of having come from the dead bodies of their parents. Plenty of young, but not living, could be squeezed from the dead bodies of their parents; so we must just smoke again. These trees have had washings of almost everything, and with the fingers too; but if the wash was very strong the trees suffered, and if weak they only tended to lessen the evil; and even when the fingers were used, and they and the liquids killed where they touched, a very small point—even a quarter of an inch missed—would, from containing some scores, soon give you millions to kill and destroy. Smoking is, therefore, the most effectual remedy next to catching them and killing them. In most cases, whether by smoking or washing, one or two applications will generally be ineffectual, because, though strong enough to kill all which are alive, it will not kill those not then alive, or even the eggs that may be deposited. Our opinion is that there is but little production in summer by eggs, but that most new races are produced in a viviparous state; but information on this subject is necessary.

One word more. When the fingers are used to squeeze such insects—and an active boy will soon thus go over a Rose tree—care must be taken to wash off all such remains of the insects with syringe or engine, or the famed hydropulps, as such squeezed remains are as hurtful to the plants as a strong dose of tobacco or Gishurst. Dusting the insects with *nux vomica*, *hellebore*, snuff, &c., will soon settle those on which it lights; but the difficulty is that the quickest eye cannot see them all, and then there is just more room for those that are left to breed all the faster. Very few of such insects will stand 130° of hot water syringed on them; but then, whatever part is missed will give you occasion for another repetition, and growing plants will not stand that long without injury—in fact at this season 120° is high enough. Of course the water gets cool a little by being thrown on—a different affair from dipping. If dipped at once, even in 120°, few insects will live; but the branch must not remain above half a minute or a minute in the water. The natural history of some of those insects by one of our first-rate entomologists, such as those whose initials sometimes honour these pages, would be extremely interesting.

A little chloride of lime would remove the smell from liquid manures, as sewage, guano, &c., and should be given in proportion to the strength of such manure. Superphosphate of lime is one of the best manures for inside purposes, and when in small quantities on the surface soil, or mixed up with water, hardly retains any smell after the watering. For all out-door purposes the earth is the best deodoriser.—R. F.]

CYANOPHYLLUM MAGNIFICUM.—I give you the dimensions of a plant which I have of this. I bought it in June, 1862, with one pair of leaves about 6 inches in length, and the stem not more. The stem is now 3 feet high from the surface of the pot, and the following figures give the length and breadth of the last four pair of leaves respectively, beginning at lowest:—24½ inches by 11½, 27½ by 12½, 29½ by 13½, 27½ by 14½. This last pair have not yet attained their full growth. The plant is in most vigorous health, having received from the first moist stove treatment, a rich compost, and frequent waterings with weak liquid manure water.—A SUBSCRIBER.

THE PROPOSED GARDENERS' SOCIETY.

I HAVE from week to week anxiously conned your pages, fully expecting to meet with some short article from more than one, giving their opinion as well as their full concurrence in the proposed Society, the prospectus of which appeared in your columns a few weeks ago. I was loath to take up my pen to advocate its claims to the notice of the craft generally, for the simple reason that I know there are plenty of older and more able hands who could set the Society in motion if they would only put their shoulders to the wheel, which if once fairly started I think there need be no danger apprehended.

That some such society is required few will deny; and I am only more astonished to see it is not by this time in working order. You have as journalists done all that could reasonably be expected; but the apathy displayed by those for whose benefit it was intended, I fear shows that the scheme was only received with the "cold shoulder." Notwithstanding all this, I still trust the Society will go on and progress; and you may rest assured if once fairly started it would not suffer for want of members and sub-scribers to its funds.

It was only the other day I had the question put to me by a neighbouring gardener, "What society do you belong to?" My reply was, "Well, none at present. I am waiting to see what was to be the upshot of the proposed new Society." "Exactly the same with me; and farther than that, should the Society not go on I shall join another in connection with our profession." Through him I was induced to write thus briefly on the subject; and although the suggestion remains dormant I hope there is life in it, and that it will spring up into vigorous action. Is it not possible to secure at once two hundred members and start the Society? Remote as we are, and cut off to a considerable extent from the society of gardeners, I still fancy Ireland would furnish her quota of members.—A PRACTICAL GARDENER, *North of Ireland*.

[We can only remark upon the above that we are quite as much surprised as our correspondent by the apathy evinced by gardeners towards a society so calculated to secure for them comfort in sickness and old age; but the apathy is as manifest as it is lamentable.—EDS. J. or H.]

"PROCEEDINGS OF THE ROYAL HORTICULTURAL SOCIETY."

THE June Number of this Journal, and a list of the Society's Fellows, Committees, &c., are suggestive of a few commentaries.

It is satisfactory to find announcements in the Journal indicative of an attention to economy. The "Proceedings" are not to be published in August, September, October, and November—"that part of the year when most of the Fellows are abroad or out of town." This will be a saving, though a small one, and if it stood alone would be on a par with ceasing to purchase "Moore's Almanac," which a spendthrift announced as a beginning of economy; but the next item of retrenchment is larger—Mr. Weir, the Society's collector in Brazil, is recalled.

In addition to the above official announcements, there are rumours afloat that the expenditure on the Kensington and Chiswick Gardens is to be very largely reduced, but having no specific information we refrain from commentary further than to say that wages, forming a large item in the last balance sheet, other than those given to the Society's garden staff, might be reduced without decreasing the Society's efficiency.

THE MERITS AND DEFECTS OF ANNUALS.

I AM glad to see that you have lately drawn so much attention to annuals in your valuable Journal; I have given much time and trouble to them for several years. No other tribe of plants, in my opinion, combines such a brilliancy of colouring with a graceful and slender habit of growth. I fear I must add, no other plants require so much care and attention.

Annuals have so many enemies, and are liable to so many diseases unless they get exactly the treatment they like, that I have often been almost disheartened with the failure of many once-promising pets. I persevere, however, always trying by experiment to find out those which are at once hardy and beautiful, requiring no protection from slugs, and not liable to damp-off. I keep a list of such to which I am continually adding the

results of my experiments. This list is especially valuable to me in one way. Every spring I give the children of our national school, and also those cottagers who are in the habit of exhibiting flowers or vegetables at our horticultural show, packets of seeds of annuals, &c., and I find it is almost useless, except in a very few cases, giving such as the slugs are particularly fond of, or such as require very careful and delicate handling.

Every year I am deluged with catalogues of annuals from the different London houses in common with every one else who has the good fortune to possess a garden. I am often, indeed, astonished at the liberality, or generosity, or whatever it may be, of those firms who year after year present me by post with a book got up generally in a most elaborate way, with a great deal of literary and scientific skill, and to whom, notwithstanding, I have never given an order even for a threepenny packet of seeds. It may afford them some gratification, at least, in return for their liberality, to know that the perusal of their catalogues is a source of great enjoyment. The *Saturday Review* says that you may enjoy your continental tour twice over, first of all in turning over the leaves of your "Bradshaw," seeing therein all the places to which you might go, and finally choosing which you will visit, and secondly in the actual travelling. In the same way I, for one, thoroughly enjoy looking over the lists of annuals, "new," "good bedders," "showy," &c., which may be bought at prices varying from 3d. to 2s. 6d., even though I have resolved at the outset not to spend more than one guinea in the purchase of the same.

While on the subject of catalogues, I cannot help remarking that they are very far from being what they might be, and that describing almost every annual as an excellent "bedder," simply because "bedding" is the fashion, is more likely to do harm than good.

One catalogue gives a very useful list of "ineffective annuals." With regard to this character, there must, of course, be always two opinions. For instance: your correspondent, Mr. W. Earley, Digswell, places *Nolana prostrata* in a list of "twenty select annuals," while Messrs. E. G. Henderson & Son place it among annuals not worth growing. In this case I am myself inclined to side with Messrs. Henderson, while I would not with them exclude the golden showers of yellow Hawkweed.

But why should not the catalogues give us a little more practical information, marking, for instance, with an asterisk those annuals which open only in sunshine, and again distinguishing those to devour which a slug will walk or crawl a hundred yards even in dry weather; in fact, those plants which are to them what toasted cheese is to mice—a treat of peculiar flavour and delicacy, and scented from afar? If any one of your readers has been unfortunate enough (a long while ago, of course, but perhaps not quite forgotten yet), to put his *Portulacas* in a shady situation, or discovered a fine, fat, black slug eagerly devouring his French *Marigolds*, he will understand the value of such information as I have suggested.

As Mr. W. Earley, Digswell, says that he makes the attempt to select twenty annuals "rather in a spirit of inquiry," I would venture to criticise his list thus: Nos. 1, 2, 3, 4, 14 open in the sun only, and are, consequently, not, I think, generally useful, although there can be no two opinions with regard to the beauty of 1, 3, 14.

Again: Nos. 5, 6, 8, 9, 15, are fit for the greenhouse only, and are, therefore, subject to the same remark. No. 16 is too much like, and at the same time too inferior to, the *Verbena* to be a select annual. No. 10 is, as I have already said, unworthy of such a position, and, I think, in selecting twenty out of the great numbers of truly select annuals, there is no occasion for giving, as in Nos. 1, 2, 3, 4, 8, 9, two different species of the same genus.

Were I to give a list of annuals at once generally useful and select, confining myself to annuals strictly so called, it would be (omitting *Mignonette* and *Sweet Pea*, as universally acknowledged to be both) the following:—

- | | |
|---------------------------------|---------------------------------|
| 1. French Marigold * | 11. <i>Saponaria calabrica</i> |
| 2. <i>Clarkia</i> of kinds + | 12. Poppy of kinds |
| 3. <i>Collinsia bicolor</i> | 13. <i>Linum grandiflorum</i> ° |
| 4. <i>Lavatera</i> | 14. <i>Love-lies-bleeding</i> |
| 5. Ten-week Stocks | 15. <i>Lobelia gracilis</i> |
| 6. <i>Malope grandiflora</i> | 16. <i>Silene pendula</i> + |
| 7. <i>Perilla</i> | 17. Candytuft of kinds + |
| 8. <i>Convolvulus minor</i> °† | 18. <i>Eschscholtzia</i> + |
| 9. Virginian Stock + | 19. Sunflower of kinds |
| 10. <i>Nemophila insignis</i> * | 20. <i>Ipomæa</i> |

Those marked thus *, readily devoured by slugs; thus †, left altogether untouched by them; thus °, open in sunshine only.

Of the above, Nos. 5, 7, 9, 10, 11, 13, 15, 16, are alone of any use for bedding purposes. Nos. 4, 6, 14, 19, are especially beautiful in those glorious old borders of tall herbaceous plants which are still to be found in some gardens. Some may be astonished at my inserting No. 16, which so very much resembles common Robin-in-the-hedge, but if sown in autumn it makes in April and May what the children call a "pink pie"—that is, a perfect semi-ball of pink flowers, which can be seen half a mile off, and, as far as colour goes, quite equals the well-known *Saponaria*; the latter sown in spring will immediately succeed the *Silene*, with another pink pie.

I make these remarks in the same spirit of inquiry as Mr. W. Earley, Digswell, and shall be glad to see any further suggestions from correspondents of wider experience than—S. L. J., *Cornwall*.

P.S.—Mr. W. Earley, Digswell, may, perhaps, say that while striking out 5 from his list because of opening in the sun only, I have myself suggested two which do so. But the usefulness in other ways, and the great beauty of the scarlet *Linum*, and the minor *Convolvulus*, more than make up for this great deficiency.

ALYSSUM SAXATILE.

I AM glad your correspondent, "RUSTIC ROBIN," at page 414, has called attention to the merits of this fine spring-flowering plant. With regard to the variety called *compactum*, I might add that we have had it in general use for several years, and the past spring we had some hundreds of plants of it in flower. Hitherto we have simply called it *A. saxatile*, dwarf, not knowing it was dignified with a distinct name; it is of very compact habit, and the whole plant is covered with a half-globe of the closest-packed golden flowers, which also continue much longer than many other flowers of similar hue. With us it bears cutting-in and transplanting at any time of the year, and always yields its myriads of blossoms at the proper time.

For many years we were in the habit of propagating the *Alyssum* extensively for planting in the beds that are in summer devoted to bedding plants, the plant itself looking well all winter, and flowering early in spring. Occasionally beds of evergreens are edged with it, and nothing could look richer than some beds of newly-planted *Rhododendrons* that had an edging of the dwarf variety the past spring. I find it is most easily cultivated from seed, and the dwarf one comes true raised in that way; it also strikes very freely from cuttings, but of late years we have adopted the mode of saving a little seed and raising a stock. A variegated variety we are obliged to propagate from cuttings, and as a variegated plant it looks well, and flowers freely; it is less compact than our dwarf, but less lanky than the old *A. saxatile*. Of all spring-flowering plants none excel this for general utility in dry soils.

The *Hepaticas* are deservedly favourites, but somehow we cannot get them to do here; they will not endure moving twice a-year and flower well, as this *Alyssum* does. On the merits of other plants I shall at a future time more fully enter, but none are greater favourites with me than that spoken so well of by "RUSTIC ROBIN."—J. ROBSON.

THE TRAINING OF THE PELARGONIUM.

At the metropolitan exhibitions there are few things which excite more surprise among the uninitiated in gardening matters than the training of *Pelargoniums*, and, strange as it may appear, even some of those who might be considered *au fait* in such matters have not hesitated to confess their want of knowledge, for but a few years back, we heard the late Mr. M'Nab remark at Chiswick, "I think nothing of your *Heaths*, having better at home; but how those magnificent *Pelargoniums* are produced I cannot understand;" and, certainly, when we look at the small pots and vast mass of foliage and flowers, it does almost appear incredible that they could be so produced; and, great as may be the merit in growing a fine *Heath*, it is quite certain that more expense and attention are requisite to grow a comparatively fine specimen of *Pelargonium*. Those who have not tried the experiment will laugh at the idea of *Pelargoniums* requiring as much skill as *Heaths*; but we have grown both, and consequently can speak from experience; and we are quite sure more attention for the time is required to grow a perfect specimen of *Pelargonium* than to grow a specimen *Heath*; and it is rather remarkable that the man who may excel in the management of

one plant is rarely first-rate at the other. In fact, hardwooded and softwooded plants require treatment entirely distinct from each other; the first requires time and attention, the other little time, great attention, and rich manure, for it is only by much nutriment and careful management in watering, by seeing the plants receive sufficient, and yet are never glutted, that success in the management of softwooded plants can be rendered certain. If larger pots are allowed, less attention would be required, but merit would decrease in the same proportion, and consequently small pots are preferred. We all know that a *Heath* or any other hardwooded plant with its indurated foliage, and comparatively small respiratory powers or surface, cannot require so much aqueous support as a *Pelargonium*, but yet they are generally grown in larger pots, and consequently in larger masses of soil. How is this? Let those who have their management inquire, and we have no doubt the investigation will repay the trouble.

Various plans have been recommended for training the *Pelargoniums*, and doubtless the low bushes generally seen are not of the most elegant form that could be conceived, but possibly they are the most suitable, and hence necessity, our great preceptor, has compelled us to adopt that form. Anything, however, is better than the long-leggy formless things we used to see, and which in some places are seen even at the present day. The pyramidal form would certainly be the best, but nature rebels against it, and it is found impossible to get plants equally covered with bloom or of equal growth. It is well known that the sap of a plant in its progress rises always to the most vertical point, and that in consequence it is impossible to get equal growth over the whole surface of the plant; for pinch, top, depress, or do what you will, the flow will still be upwards, and the growth must be strongest at the most vertical points, and there will be bloom, while the lower branches will scarcely produce a flower. Even on the dwarf system of training it is found very difficult to insure an equal distribution of sap, as some shoots, especially those upon the most central and vertical branches, are always disposed to produce the strongest shoots, and it is only by occasionally removing them, or tying the points below the level of the weaker shoots, that an equal distribution of sap and growth can be insured: therefore, great watchfulness is necessary, and considerable practical knowledge to guide aright the energies of the plant.

It is sometimes remarked that *Pelargoniums* require neither training nor staking, indeed there are certain writers who would interdict the use of stakes altogether. Such writers, however, are more to be pitied than laughed at; they belong to a race of arm-chair gardeners, who find it more convenient to teach by precept than example, and whose lucubrations are more remarkable for detailing what they would do than what they have done. Such men are useful in their way, for even slovenly gardening is better than no gardening at all. But, once for all, we may say *Pelargoniums* cannot be grown to any size without supports; when in free growth a rough wind would blow them limb from limb; and as for carrying them to an exhibition without smashing them to pieces, it would be impossible. That less stakes than are generally used may suffice, and that they may be used of a much smaller size is quite true; but to attempt to carry a plant without staking is quite out of the question. Do not, however, use any more than are absolutely necessary, and let them be as thin and unobtrusive as possible. The best are the young shoots of the *Snowberry* (*Symphoria racemosa*), and the next small tough, dry, young *Willow* shoots. Either of these kinds will stand for a season, and when dry they are so tough and wiry that they may be bent in any direction, and will retain their form.

The annexed engravings show a set of young plants from the



Fig. 1.



Fig. 2.

first start in October in small pots, up to a fully-formed plant. Fig. 1 is a young plant just purchased from the nurseries, the

head of which has been taken off to form a cutting, and the buds of which are breaking into young shoots. Three shoots are produced, and those after growing to the length of 4 or 6 inches are stopped by pinching out the points, produce their lateral shoots and flower in the autumn; and after being thoroughly ripened by exposure to the full sun, are cut down as represented in fig. 2. This is what, in nursery parlance, is termed a young stool or bottom, and is the sort of plant which an amateur should select to grow into a nice specimen. In fig. 3 we have

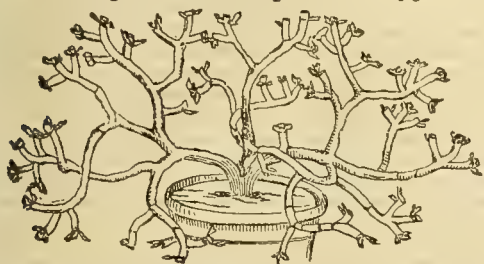


Fig. 3.

the same plant grown another season and cut down; and here it will be seen it has added materially to its size, and has become a really fine ground-work for a specimen plant. But to form these bottoms is not quite so easy as to write about them. Young Pelargonium shoots are formed of brittle material, and hence considerable care and patience are necessary to get the shoots into the requisite form. We first begin with long hooked pegs, and peg the shoots into their places a little at a time, say depressing each shoot a little every three or four days until it gets into proper shape; always, if possible, taking advantage of the sunny part of the day, and allowing the plants to be rather dry at the time. In the afternoon of a sunny day, and before watering the plants, you may take much greater liberties with the young shoots of a Pelargonium than would be safe in the morning; and hence that time should always be chosen. When the plants get too large for pegs, small sticks of the necessary strength are used, placing them wherever it is necessary to draw the branches to, and to avoid using many stakes a band of bass, mat, or wire is passed round below the rim of the top and made fast; a piece of fine matting or string is then tied to the various branches, and each is drawn into the position it is destined to occupy. When the branches are depressed below the level of the rim of the pot, an arrangement of this kind is indispensable, and independently of that, it is a very neat way of accomplishing our aim. Without a properly formed stool it is impossible to get a perfect plant; and, therefore, no pains must be spared to arrange the branches properly before they get too much crowded with foliage. Sometimes branches are liable to split in the fork—that is, where they start from the parent stem, and then, before attempting to train them, the branches must be tied together by means of strong pieces of soft matting. Thus arranged, with perseverance and patience, the plants may be made to assume any form you please, but they must be gently handled; and hence, never attempt to train a plant except when you have leisure to do so carefully, and without hurry.



Fig. 4.

In fig. 4 we have the plant advanced another year, and it is

now of a size sufficiently large for all ordinary purposes. Such a stool, with proper management, and if of a free-growing kind, such as Queen Superb or Reine des Français, would form a plant from 4 to 6 feet in diameter, and should produce more than a thousand trusses of flowers—a sight worth seeing, and an ample recompense for the trouble that has been taken in its formation. Such stools are rarely to be bought; those who have them do not like to part from them. The stools represented in our engravings are not ideal sketches, but actual portraits of plants growing in our own establishment, which we shall be happy to show to any one who may call upon us. No. 2 is a young stool of Jenny Lind; 3, that delicate kind called Picturata; and 4, Queen Superb. Larger stools of the same kind may be found, but not more perfect than Nos. 3 and 4. Of such free-growing kinds as Queen Superb, it is possible, by sacrificing the flower, to grow a plant of the size in one season; but of Picturata, Formosa, or Fairy Queen, it would be good work to get them of the same size in three seasons. The reason is this, they only produce wood-buds at or near the base of the shoots, and hence we have no choice but to cut back to them; but the Queen-bred ones, as they are called, grow more vigorously, and hence may be cut much longer.—W. P. AYRES, "*The Fancy Pelargonium*."

LEAVES OF BEGONIA GRIFFITHII ROOTING.

ON the 4th of June, 1862, some of the leaves of Begonia Griffithii, along with numerous others of the same class of plants, were given to a lady in this vicinity. I was surprised to learn about three months ago that one leaf of Griffithii was still fresh as the day when it was taken off the plant, and had actually made roots in the glass of water wherein it was put at the time the others faded and died. But to have a full conviction of the fact I examined it on the 9th of this month, being one year and five days since I took it off the plant. Well, its silky-looking roots fold round the inside of the glass which contains nothing but pure rain water; and all up the stem, which of course is constantly immersed in water, there are a dozen or more young plants showing themselves, but none at the base of the leaf, where it is generally propagated from. Griffithii was in close succession after Rex was introduced. It is a well-known fact that Begonias like a moist close place; but becoming an aquatic is another matter.—ALPHA.

[The fine-leaved Begonias have, many of them, singular powers of vitality. We have found slips and pieces of leaves rooting on damp floors, where they had been accidentally dropped. They will do even with little water if the atmosphere is at all moist.]

TYING MATERIAL.

HAVING read Mr. Robson's article in No. 116 of your Journal I beg to inform him that I have received from Messrs. Dickson, Hogg, & Robertson, of No. 22, Mary Street, Dublin, three samples of different materials as substitutes for matting and Cuba bast. They are labelled, "Japanese Flax," "Green China Grass," and "White China Grass." The two latter are best; they are cheaper than bast, and much superior to it for both in-door and out-door work. They are first-rate for tying pot-plants, as they can be drawn to a hair-like fineness; they are much improved by being put in water for an hour before use.

I think when they become better known they will entirely supersede Cuba bast and matting for garden purposes.—G. G. Wells.

JOTTINGS FROM PARIS, 1863.

UNDER this head there is in page 432 of THE JOURNAL OF HORTICULTURE a sort of account rendered by "D." of Deal, of the vegetable part at the last horticultural show in Paris. Having been absent from home I only yesterday became acquainted with the article in question, the real motive of which I leave others to appreciate.

Had my Strawberries really been such as "D." of Deal finds particular pleasure in representing to the readers of THE JOURNAL OF HORTICULTURE, I am sure that not only the Judges would not have given them a first prize, but they would not even have been admitted by the parties charged with the arrangements of the Exhibition. If "D." of Deal did possess a little more

practical knowledge of gardening he would not have considered it strange that in France, on the 8th of May, some of the sorts composing my lot were not of the same size as those frequently shown in London by Mr. Smith and others. This is easily explained. Of course on the 8th of May no out-door Strawberries are ripe in this part of France, and consequently my lot consisted chiefly of what is called "afterfruits" of forced plants, the finest of which were then gathered. Thus it is quite natural that the berries generally could not be of enormous size. Had the Exhibition taken place a fortnight earlier, when my crop was at its best, the fruit would have been very near the size attained by the best growers round London early in June. This, I think, sufficiently proves that in France there is something better than the "Fraise des quatre saisons;" and that upon the whole it would have been wiser of "D." of Deal to abstain from his satirical report.

As to his observation of my having written "prodigious things" on Strawberries, I leave my fragarian friends in England to decide whether there was any exaggeration in what I humbly submitted to the public. Whatever I wrote was done in the most impartial spirit, and never exceeded the truth.—FERDINAND GLOEDE, *Les Sablons, Moret-sur-Loing, France.*

SUCCESSION OF FLOWERING HERBACEOUS PLANTS.

I SEE in the gardening world those who, like myself, are not so passionately fond of so much bedding stuff. Why should we? Are there not many hardy herbaceous plants equally beautiful that would require but little care? Like our bedding plants, the more care taken of them the better they would become.

We have great men who take economy for their motto. Would it not be more economical if they were to turn their attention to those plants that are much hardier? We now have to find pits, frames, covering, besides a great deal of labour and some firing, to protect them. Surely that is not economy.

I have talked to some about this matter. They say "We should not have the great variety of colour which we have in the bedding stuff." No, neither do we want it. Where is the need of a number of shades? In my opinion we only want distinct colours, and we have these in the hardy plants.

I think if our nurserymen and cross-breeders were to spend half of the time and money on the hardy class that they do on the most tender things, we should soon have them much better than they already are. Or have they been so much improved that there is no more room for improvement?

Why I thus plead the cause of hardy plants is this. I am writing in the middle of June when bedding plants have scarcely made a move, and before they get properly into bloom it will be at least mid-July; or, supposing we count from now, there will be June, July, August, and then comes September, when we may expect frost to cut them off. So we have to nurse them from eight to nine months, and we have only three months of pleasure from them. That would not be the case with the more hardy plants. There are many that bloom early and late. I will give a list; every one wishing to have bloom all the year round might select from them and their varieties:—

JANUARY.—*Eranthis hyemalis*, *Helleborus niger*.

FEBRUARY.—*Arabis alba*, *Bulbocodium vernum*, *Cyclamen coum*, *Helleborus foetidus*, *Hepatica triloba*, *Scilla sibirica*.

MARCH.—*Anemone apennina*, *Anemone nemorosa*, *Arabis alpina*, *Aubrietia deltoidea*, *Aubrietia purpurea*, *Cyclamen europæum*, *Erythronium dens-canis*, *Gagea glauca*, *Helleborus atro-rubens*, *Leucojum vernum*, *Narcissus Tazetta*, *Scilla amœna*.

APRIL.—*Alyssum saxatile*, *Arabis rosea*, *Atragene canadensis*, *Doronicum caucasicum*, *Erythronium grandiflorum*, *Fritillaria imperialis*, *F. præcox*, *Gentiana acaulis*, *Iris pumila*, *Leucojum æstivum*, *Libertia grandiflora*, *Narcissus jonquilla*, *Omphalodes verna*, *Ornithogalum umbellatum*.

MAY.—*Achillea ptarmica*, *Achillea tomentosa*, *Ajuga alpina*, *Ajuga genevensis*, *Ajuga reptans alba*, *Armeria dianthoides*, *Armeria maritima alba*, *Asperula odorata*, *Bellevallia operculata*, *Corydalis sibirica*, *Czakia liliastrium*, *Dielytra spectabilis*, *Dodecatheon integrifolium*, *Hesperis matronalis*, *Hoteia* (*Spiræa*) *barbata*, *Iris cristata*, *Iris sub-biflora*, *Lupinus macrophyllus*, *Lupinus polyphyllus*, *Ornithogalum montanum*.

JUNE.—*Adenophora verticillata*, *Allium Moly*, *Asphodelus luteus*, *Camassia esculenta*, *Cerastium tomentosum*, *Gladiolus*

byzantinus, *Iris amœna*, *Iris florentina*, *Iris sambucina*, *Iris-lirion montanum*, *Lilium bulbiferum*, *Mimulus variegatus*.

JULY.—*Acanthus spinosissimus*, *Aconitum variegatum*, *Asclepias syriaca*, *Asclepias tuberosa*, *Epilobium spicatum*, *Epilobium spicatum albiflorum*, *Liatris squarrosa*, *Lilium tigrinum*, *Lychnis chalcidonica*, *Mimulus cardinalis*.

AUGUST.—*Aconitum japonicum*, *Chelone obliqua*, *Coreopsis grandiflora*, *Funkia subcordata*, *Liatris spicata*, *Solidago humilis*.

SEPTEMBER.—*Acis autumnalis*, *Allium azureum*, *Amaryllis belladonna*, *Anemone japonica*, *Bulbocodium versicolor*, *Colchicum byzantinum*, *Colchicum variegatum*, *Liatris elegans*, *Oporanthus luteus*, *Solidago canadensis*, *Tritoma pumilis*.

NOVEMBER.—*Aconitum autumnale*, and many more might be added. I have given the time of these coming into bloom; some of them will last two or three months.

In giving the above list let it be understood it is not intended to exclude the bedding plants altogether—far from it. They will make a good addition to herbaceous plants. I hope some of our more experienced men will give their opinion on the subject.

P.S.—I forgot to put in the proper place the following well-known favourites, which might be added to the above list:—*Asters*, *Phloxes*, *Dianthus*, *Larkspurs*, *Foxgloves*, *Snapdragons*, *Hyacinths*, *Tulips*, *Daisies*, *Polyanthuses*, *Pansies*, *Violets*, *Forget-me-not*, *Hollyhocks*, *Pentstemons*, *Campanulas*, *Crocus*, *London Pride*, &c.—G. H.

HOT WATER VERSUS FLUES.

I THINK that the gardening world is much indebted to Mr. Robson for bringing this subject so prominently forward. I am perfectly satisfied that the more it is ventilated the more good will be derived from it. I, like Mr. Robson, am situated in a dear coal country, with coal at 19s., and steam coke at 21s. per ton without cartage, which adds 2s. 6d. per ton to the cost. I cannot advocate the cause of flues against hot water from experience, having had the working of flues and hot water in the same place, for the vineries followed in succession, thereby depriving me of the data which are necessary to arrive at a correct estimate. I always felt certain that, making allowance for the difference in temperature, a third less fuel was consumed by the vinery heated with hot water.

I perfectly agree with Mr. Robson, that the best boiler is not yet obtained. I have a No. 5 tubular boiler from an eminent firm in London, that when we are in the full tide of forcing, consumes more than two tons of coke a-week. Some time ago, out of curiosity, I placed a thermometer in the top of the chimney, about 16 feet high, in eight minutes it indicated 260°. How high it would have read I do not know, as the thermometer split to pieces the instant I replaced it.

I feel convinced I could work a small vinery of 25 feet by 12, with the waste heat of this boiler. Such is the opinion I have formed from four years' experience of its working here. As far as my experience goes, I am inclined to think that boilers are not so much at fault as the contractors for the heating apparatus.

If more piping were allowed—say a third more than what is now considered to be sufficient, the apparatus after becoming heated would not require so great a combustion to keep up the desired heat. A more steady and moist heat would thus be obtained, and if a third less fuel could be saved, which I think might be the case in those counties where coal is so dear, the balance will do far more than outweigh the first cost of piping.—W. MC. L.

MILLIPEDES—CLUB ROOT—GARDEN MICE.

How could I destroy the insect which I have enclosed? It is most destructive to my Strawberries. I have gathered quantities of these with holes eaten quite through, and have found the insects curled up in the middle of the berry. With me I think they are more destructive than the slugs.

Is it the same insect that causes the Cabbage and Broccoli to club? I cannot plant anything of the kind that has to stand in the ground long, without a large ball being formed at the root to the size of a half-pint cup, and I find from two up to twenty or more of these insects when I take up the roots.

I am also very much troubled with what is called the grass mouse. This mouse has destroyed nine Melons, the largest one

at the time being the size of a good Apple. Four of them were nibbled in two or three places, and the leaves and runners I could take out of the frame by handfuls, till one light was literally cleared of the foliage altogether. I tried to trap them, but could not catch one, and to poison them, but they would not eat the bread that I put the poison on.

If any of the readers of your Journal could instruct me as to the best way to get rid of these pests, I should receive the information with thankfulness.—A CONSTANT READER.

[The specimen sent is the snake millipede. We have seldom found them so destructive. The centipede is more fond than the millipede of getting into fruit and coiling itself up, as in Apples, Peaches, &c. You can do little now with your Strawberries, unless in the way of prevention. We have tried beanstalks cut into six-inch lengths, and dipped in a weak solution of sugar and water. They will at times lodge in these, and you must dislodge them as you would do an earwig. A dressing of lime and soot would help to keep them also from the Strawberries, as they do not like travelling over such materials. The eggs are deposited in holes in early summer, and are soon hatched with the heat. Lime and soot are very disagreeable to them. This is all we can say. Would some friends be kind enough to help in this, and also the following cases?

The Cabbages are clubbed by quite a different animal—a small weevil; and the chief cures for it are examining the plants before planting, removing all the small clubs or knots, if any, and killing the small grub weevil; then dip the roots in a thick paste mortar formed of soot, lime, and soil, three parts of the latter to one of each of the former, before planting, and use soot in the first watering afterwards. If a little soot and lime are put on the ground after the plants begin to grow all the better. This weevil seems to shun all nitrogenous matter and ammonia. It will also be good policy to change the Cabbage ground every year. If so looked over at planting time, and the ground is freshly and well dug, and well manured, and if soot and lime are used in watering, there will be little of the club in old or young plantations. In places where the weevil has become very numerous, it is a good plan to let the plants grow to a fair size, and to well examine them before final planting.

We can sympathise with you as to the grass mouse. He is not easily trapped, and is also difficult to poison. We have poisoned him by throwing with a brush, not with the hand, a little arsenic into the pieces of Melon or Cucumber he had been tasting. Generally, traps baited with bread, or poisoned wheat, &c., are useless, he will not look at such hard materials; but we have caught him in figure-four traps, by placing some tempting green delicacy below the overhanging heavy tile, and nibbling about it brought it down. If he lodges in a hole of the bed, he can also be brought out thence as a half-drowned mouse, by pouring painful after painful of water in the hole, and, having previously removed the glass from the frame, there is little difficulty in pouncing upon him. The most certain way, however, is to notice his runs, and place in his route either small steel traps, less than for rats, or hair traps, made of a stout hair, with a running noose, exactly on the same principle as the poacher adopts for rabbits, hares, and pheasants. We have used all these means with fair success, when we have been troubled with such visitors. It is useless, in general, to present such a mouse with anything tempting, unless it be green. We once had a pit of *Calceolarias* levelled with the ground. The frost was intense outside, and they had not been uncovered for three weeks. The worst of it was, the mouse had eaten but little, and he seemed to have hit upon cutting over for diversion. Most of the roots broke again though weak, and the cut tops made good cuttings, if not too much nibbled.]

ENTOMOLOGICAL SOCIETY'S MEETING.

THE June Meeting of the Entomological Society was rendered a special one, the members having been especially summoned for the purpose of taking into consideration the following report of the Library and Cabinet Committee, dated the 30th March last:—"That the present income and the financial prospects of the Society do not warrant this Committee in believing that the Society is or will be able to provide the sums requisite for forming a collection of British insects which shall be worthy of the Society, and for maintaining the same in a satisfactory state. This Committee, therefore, recommends to the Council that the Society's collection be discontinued, and that proper steps be

taken for the disposal of the specimens and cabinets. The Committee, however, further recommends, that the type specimens be not dispersed but placed in some public institution where they will be readily accessible and available for scientific purposes, and the Committee suggests the feasibility of some arrangement by which the specimens in question might be placed in the British Museum."

At its first foundation the Society's chief objects were—1, the formation of an entomological collection; 2, the formation of an entomological library; 3, the publication of the Society's "Transactions." The valuable collection of the late Mr. Kirby was presented entire to the Society by its venerable possessor, and large additions were made by the late Messrs. Children, Hope, and many other members. It was, nevertheless, found after the experience of many years, that a small society like that of the London Entomological Society was only encumbered by the possession of a collection which required the attention of a Curator, involving considerable expense. In addition to which it was found that the collection did not keep pace with the progress of the science, whilst the expense it entailed on the Society crippled the more serviceable objects of an entomological library, and especially the publication of the Society's "Transactions." Several years ago, accordingly, it was proposed by some of the members that the entire collection should be disposed of (as had been done by the Entomological Society of France, and has since been done by the Zoological Society of London, and is also proposed at the present time to be done by the Linnean Society), but the proposition was only partially adopted by the sale of the exotic portion of the collection. Circumstances have since, however, shown that it would be advisable to carry the proposition fully out, especially as the original constitution of the Society contemplated the study of exotic as well as British entomology, and the objections against retaining any part of the collection were equally strong against the British as against the exotic portion of the collection. Under these circumstances, and with the examples of so many other Societies before them, it is not surprising that the proposition of the Library and Cabinet Committee was adopted by the Society at large, and we have since had the pleasure to learn that the type specimens, including, of course, Mr. Kirby's collection of British Bees and other insects, rendered valuable from having served as the type of the descriptions published by other entomologists, have been transferred to the British Museum, where they will have a much surer chance of being preserved and made available for the use of students than they would have had if they had remained in the possession of the Entomological Society.

At the general Meeting of the Society held on the same evening, the President in the chair, Mr. Stainton exhibited some small Lepidopterous larvæ which had been found mining in the leaves of the Hazel. The same larvæ having been also found on *Kibes sanguineum* and in Birch leaves. They were supposed to be those of *Incurvaria pectinea*.

Mr. G. R. Waterhouse exhibited specimens of an apparently new British species of *Homalota* (a genus of minute Staphylinidæ).

Mr. F. Bond exhibited hermaphrodite specimens of the Orange-tip and Swallow-tail Butterflies; in both of which the right side of the individual exhibited the female, and the left side the male form, contrary to the usually observed state of such specimens.

The President also exhibited drawings of two hermaphrodite specimens of the Honey Bee, the different parts of the body exhibiting sexual differences of the male and worker Bees; also, specimens of *Braula cœca*, a small wingless parasite infesting the hives of the Honey Bee, which had been imported into this country with the Ligurian Honey Bee, in a hive of which variety these parasites had been found.

Mr. McLachlan read descriptions of three new British species of Caddice Flies (*Trichoptera*), of which he exhibited specimens.

Mr. Stainton read some notes on a curious Lepidopterous insect, *Tinea vivipara* (Scott), described in the "Transactions of the Entomological Society of New South Wales," as being viviparous in its habits; also, notes on the "Proceedings of the Entomological Society of Philadelphia."

The Secretary also read a letter from Mr. C. A. Wilson, of Adelaide, giving an account of the entomological captures of Mr. F. G. Waterhouse, the naturalist attached to the South Australian Exploring Expedition under Stuart, which had recently succeeded in crossing the Australian continent from Adelaide to the north-west coast and back again.

SOME PLANTS AND GARDENING OF AFFGHANISTAN.

The dwarf Palm, which mainly composes the "jungal," or brushwood, in this district, and is called in the vernacular "Maizarri," or "Mzarrai" (Tiger-grass), is applied to a great variety of useful purposes by the natives. From the entire leaf are made fans; from the leaves cut into strips are plaited mats; from the fibres of the leaf and its stalk, which are first prepared by maceration in water and bruising, so as to separate them from the parenchyma, ropes are made; and from the finer fibres are made the sandals commonly worn in the country, and termed "chapli." The chapli is usually worn by all the hill tribes of Afghans, instead of the ordinary shoe, and though not so durable perhaps, is much better adapted for walking over rocky ground. The downy hair found in the axil of the sheathing leaf-stalk of the dwarf Palm is used as tinder, and is sometimes soaked in the sap of the Mulberry tree to make it more inflammable. The delicate white embryo leaves in the centre of the leaf-bud have a sweet and astringent taste, and are in great repute, and of common use, as a domestic remedy in cases of diarrhoea and dysentery. These same leaves, however, when they become more developed, lose their sweet taste and become very sour, and are still astringent. In this state they are used as a purgative medicine, but chiefly, however, for horses and cattle.

The Logar district produces corn in great abundance, and, together with Ghazni, is one of the principal granaries of Kabul. It also produces great quantities of Apricots and Grapes, both of which are extensively exported to Hindustan. The Vines in this district are cultivated in the same manner as in Turkey, and differently from the method usually adopted in other parts of the country. Here, instead of being grown in deep trenches, and their branches supported on the intervening ridges of earth, or on frameworks of wood, the Vines are planted in regular rows, and trained like bushes by pruning and clipping their branches and tendrils. The Grapes are chiefly of the varieties known in the country by the names of "Hussaini" and "Shaikh-khali." They are gathered before they are quite ripe, and packed in "drums" of poplar wood between layers of cotton wool, and in this state exported to Hindustan. So great is the trade in these fruits that the Poplar tree is regularly cultivated in copses for the supply of the material for these "drums." The trees grow to a great height, and very straight, and no branches are allowed to grow except near the summit. About the eighth or ninth year the trees are fit to cut down. The wood is very white and soft, and from want of durability is never used for building purposes when other timber is procurable.

Besides these fruits, all the vegetables commonly met with in England, except the Potato, are largely cultivated; and among others a kind of Leek, called by the natives "Gandanna." The leaves of this plant are used as a vegetable in these parts, in the same way as Spinach is with us. The plant is perennial, and cultivated in a peculiar way. The roots are never dug up, but the leaves are cut away two or three times in the year, a new crop succeeding in due course of time after each cutting. In the spring and autumn the surface earth is carefully turned, mixed with a top-dressing of manure, and freely irrigated. Some of these Gandanna-beds continue to yield for an astonishing number of years. In Logar we were credibly informed that several fields of this vegetable were twenty-five and thirty years old, and that in Kabul there is still flourishing a field of Gandanna which was sown in the time of Nadir Shah, upwards of a century ago. Clover and Lucerne are extensively grown in Logar as fodder. The crops, after being cut and dried, are rolled into thick cables, and thus stored for winter use.

During our march through this district our camp was daily supplied with quantities of Rhubarb, of which our troops and camp-followers consumed several bullockloads, both raw and cooked. Rhubarb is a very favourite article of food amongst the Afghans, by whom it is eaten both in the fresh and preserved state. In the former case it is as often eaten raw as cooked, but in the latter it is only added as a relish to other dishes, meat or vegetable. The plant is never cultivated, but grows wild on the neighbouring hills and in the stony soil at their base; and in these localities it is collected by the neighbouring villagers, who bring it into the populous districts for sale. We met with the plant in two forms. In the one the leafstalk was greenish-red externally, coarse and stringy within, and altogether extremely acid and disagreeably bitter. In this state the Rhubarb is called "chukri"

by the natives, and it is simply the natural condition of the plant. The other form was quite different from this. The stalk was white and smooth, very juicy, and of a pleasant subacid taste. This is called "rawash," and is the blanched leafstalk of the wild plant. This condition is produced artificially by the villagers, who, in the spring, when the leaves are just commencing to sprout, cover them over with a heap of loose stones and gravel, so as to shut out the access of light. This "rawash," when cooked, has a delicate flavour, and is much superior to the Rhubarb commonly met with in England.

The Vine is very extensively cultivated in the suburban gardens of Kandahar, and they produce no less than nineteen different kinds of Grapes. In two or three of the largest vineyards there are wine-presses, but the quantity of liquor produced is very limited, as its use is entirely confined to the chiefs and wealthy classes, who can indulge in the forbidden drink with less fear of obloquy or punishment than the poor people, who are more amenable to the discipline exercised by the priesthood. The wine made at Kandahar is red, and is prepared from Grapes of the same colour, which are known to the natives by the terms of "Rocha-i-Surkh," "Sahibi Surkh," "Lal i Sufaid," "Lal i Surkh," &c. The Hindu population consume large quantities of a fiery spirit distilled from dried Grapes, called "Kishmish i Sufaid," and "Kishmish i Surkh;" and they are helped in this by many of the Mussulman inhabitants of the city, who, however, do so secretly. The Khatin Grapes produce the well-known Manakka Raisins, met with in India. The Sahibi Surkh and Sahibi Ablak produce the sun-dried raisins, called, from the fact of their being void of pips, "Kishmish i bedana." These raisins are very small, of a light green colour, and very sweet taste. They are largely exported, and also consumed at home in immense quantities. The "Rocha i Surkh" and "Rocha i Sufaid," as also "Toran," are Grapes of an inferior kind, and are mostly consumed in the fresh state by the poor. The "Hassaini" and "Shaikh Khali" Grapes are of great size, of a pale green colour, and very delicate flavour. They are gathered before they have quite ripened; and, packed in drums of poplar wood between layers of cotton wool, are exported to Hindustan in vast quantities, and even find their way down to Calcutta. The "Acta" Grape is also of large size, but its flavour is inferior. It produces, however, excellent raisins, called "Kishmish i daghi," or "abjosh," which very much resemble the best kinds of the bloom-raisin met with in the English market. They are prepared by dipping the fresh and ripe bunches for a moment or two into a boiling solution of quicklime and potash, previous to drying in the shade. Besides the Grapes noticed, there are other varieties, which are either altogether consumed in the fresh state, or else are converted into raisins by drying in the sun. And in this form they are largely exported to Hindustan.

Besides Grapes, the gardens around Kandahar produce many other kinds of fruit, such as the Apricot, Plum, Peach, Cherry, Apple, Pear, Quince, &c.

Of the Apricot (Zard-ālu) eleven varieties are to be found in the Kandahar district. The "Kaisi," "Charmaghz," and "Charbaghi" varieties are those most esteemed. They are largely consumed in the fresh state, and are also preserved for exportation to Hindustan by drying in the sun. But previous to this process the fruit is sliced open, its stone removed and split, the kernel extracted, and then replaced in the fleshy part of the fruit. In this form the Apricot is called "Khubāni." The variety named "Pas-ras" is, as its name implies, the last to ripen. There are two kinds, a large and small. These, together with other varieties, named "Surkhcha," "Sufaidcha," "Plan," "Shams," and "Shakarpara," though generally consumed in the fresh state, are also dried; but the stone (or putamen) is not removed: in this state they are called "Taifi." To the taste they are very acid, being generally dried before quite ripe: they are chiefly used as a relish to many Afghan dishes, and as a component of some kinds of sharbat. Gold and silver-smiths use a hot decoction of these fruits for the purpose of cleaning and giving a bright lustre to their metals.

Of the Peach (Shaft-ālu) there are only two kinds at Kandahar. The one called "Babri" is an inferior fruit, of small size and acerb flavour; but that known as "Tirmah" is a very splendid fruit, of great size and luscious flavour, and much superior to any I have ever met with elsewhere.

Of the Quince (Bihi) there are three kinds—viz., the "Shakar," or sweet Quince, the "Tursh," or sour Quince, and the "Mians," or Quince of medium quality. The first kind is generally consumed fresh, and is also often carried about the person on ac-

count of its agreeable perfume. The other kinds are generally candied, made into jams, or cut into slices and dried for future use as an adjunct to other dishes. The seeds of each kind are demulcent, and are added to sharbats. Both the fruit and the seed are exported.

Of the Pomegranate (*Anar*) there are six or seven varieties. Those grown at Panjwai are the finest, and most highly esteemed; they are of great size; the pips are of blood-red colour, very juicy, of excellent flavour, and perfectly sweet, without any of the tartness belonging to other kinds of this fruit. The Panjwai Pomegranates are justly celebrated throughout the country, and large quantities are carried from this to the Kabul market. The fruit-rind of all the varieties is an article of export, as well as of home consumption, for the use of tanners and dyers. The root bark is a common domestic remedy for diarrhoea, and is also used as a vermifuge.

Of the Fig (*Anzir* or *Anjir*), which mostly grows wild, there are two varieties: one bears a black fruit called "Makkai;" the other a white, called "Sada." The fruit of both kinds are small and sweet. The former are strung on thin cords and exported; the latter are consumed at home.

Of the Mulberry (*Tut*), which also grows wild, there are nine or ten different varieties. Some of them are preserved in the dried state, and eaten with Almonds and raisins, or with Walnuts and parched Maize or Lentils. In the northern parts of Afghanistan the Mulberry tree is very abundant, and the people of these districts use its fruit as a substitute for corn flour. The bread made from the flour of dried Mulberries is said to be sweet, wholesome, and fattening.

The abundance and consequent cheapness of all sorts of fruits in this country is quite astonishing. The natives indulge in them often to excess, always most freely, and suffer in consequence, especially the poor, who, for several weeks of the summer season, know no other food.

Before taking our leave for the night, Fattah Mohammad Khan arranged a shooting party for the early morning, to beat over the corn fields around the city walls, which were now swarming with quail, and proposed that on the conclusion of the sport we should join his breakfast party in the garden of the Sardar Rahmdil Khan, where he promised we should have an illustration of the Afghan style of feeding.

The invitations for both were accepted, and accordingly daylight found our party, gun in hand, on the quail ground, where shortly afterwards we were joined by Fattah Mohammad and his suite. Our dispositions were soon arranged, and by sunrise we commenced beating the fields outside the Kabul gate of the city. Gradually working our way round the southern walls, we at length struck off towards Rahmdil Khan's garden, where we arrived at about ten o'clock. Here we found a large assemblage of guests awaiting our arrival in a tastefully decorated "baradarri," or summer-house, the upper balconies of which overlooked a piece of ornamental water that seemed to extend nearly the whole length of the garden, and terminate below another baradarri at the other end. We had hardly commenced examining the fairland scene before us when our attention was drawn off to the noisy activity of a small army of cooks, who were busy under an adjoining clump of Mulberry trees preparing the various dishes that were soon to regale us, and the savoury odours from which vied with those from the flower-stocked parterres that in one continuous strip of fringe bordered on either side of the tank already referred to, whilst both combined to perfume the air with most grateful and appetising effect on the olfactory—warning of the good things that were coming.

Whilst breakfast was being prepared, we seated ourselves on divans in an open balcony that overlooked the greater extent of the garden, and faced another but smaller summer-house near its opposite end. The garden itself is a walled enclosure of, perhaps, six or eight acres in extent, and of an oblong shape. Near the centre of the distant sides stand the two summer-houses. Each is a tastefully-devised but gaudily-painted building, consisting of two stories; the lower is occupied by stabling and servants' houses, whilst the upper contains a principal central room that opens on to the balcony, on each side of which are the projecting windows of the side rooms; the walls of these rooms are decorated with flowers, arabesque patterns of mosaic, and figures, principally, however, of dancing girls and boys.

Along the centre of the garden, and extending from one summer-house to the other, is a shallow masonry reservoir full

of water; it is so arranged that at intervals of 50 or 60 yards or more, the reservoir rises in a step of 4 or 5 feet, producing a small cascade by the falling of the water from the one to the other below it. On the sides of these reservoirs are series of fountains, the perforated tubes of which indicated the variety of elegant patterns in which they were arranged. Beyond the fountains and the border of the reservoirs the ground was laid out in one long continuous strip of flower-beds on either side, which at this time were in full bloom, and from the variety of their bouquets and hues imparted to the scene a most charming appearance and delightful fragrance. The fountain-tubes were, unfortunately, greatly out of repair from long neglect, "or," as Fattah Mohammad said, "he would have made them play, for their not working was the only thing that detracted from the resemblance of this garden to 'Bihisht,' or 'Paradise.'" On either side, and beyond the flower-beds, were straight gravelled paths, some 4 feet or more wide. Each extended the whole length of the garden from one summer-house to the other, and, like the reservoirs, &c., rose in terraces, by a few steps at a time, at intervals of 50 or 60 yards. These walks were flanked on the outer side by single rows of stately Cypress and white Poplar trees, which formed a boundary wall, as it were, to the ornamental portion of the garden, for the rest of the space beyond them was laid out in vineyards, orchards, and corn fields. The orchards were composed mostly of the Apricot tree; but there were also the Plum, Cherry, Quince, Mulberry, Fig, and other fruit trees. Notwithstanding the delights of this garden in its fresh and fragrant youth of spring, there was great room for improvement in that portion of it allotted to the pleasure and ornamental grounds. On this part the artist's labour was certainly very deficient, for there was a painful absence of variety or taste in the disposition and arrangements of the different terraces.

Looking from the balcony of the large summer-house to the one at the opposite end of the garden, the intermediate space was occupied by a series of rigid straight lines. In the centre lay a narrow and long sheet of water, which stretched away in low terraces to the other end of the garden, where it seemed to end in a point under the opposite summer-house. On either side of this was a band of variegated flower-beds, then a plain path, and finally a single row of tall slim Poplar and Cypress trees that ranged after each other in alternate succession. Beyond these the space was one confused mass of foliage. The little cascades in the centre of the prospect, produced by the water falling from one terrace to the next below it, were the only exceptions to the otherwise stiff and monotonous appearance of the garden.—(*Bellew's Mission to Afghanistan.*)

WORK FOR THE WEEK.

KITCHEN GARDEN.

HOE in dry weather between all crops in rows if they are not mulched with grass or short dung, to kill weeds and to loosen the soil around the plants. We strongly recommend the mulchings between the rows of vegetables, for wherever the ground is at all stiff and exposed at this season to the powerful action of the sun, it is apt to crack and rend in several directions, by which the roots of vegetables are in many instances destroyed. *Beans*, a few Mazagans may yet be put in, which will produce late in the season, if the weather proves favourable. *Broccoli*, Cape and Grange's Cauliflowers may now be planted where the early Peas have been gathered. If the weather continue dry they will require an abundant supply of water. *Cabbage*, sow a little more seed immediately, if the sowing recommended last month has failed. *Chervil*, another sowing to be made for succession. *Dwarf Kidney Beans*, the last principal sowing to be made. Earth-up the advancing crops. Those in flower would be benefited by a good soaking of water. *Endive*, continue to plant out a few once a fortnight to keep up a succession. Another sowing to be made. *Leeks*, those sown in drills to be thinned to a foot apart in rich ground. The thinnings will do to plant out. *Parsley*, a sowing to be made so as to get strong plants by the winter. *Peas*, earth-up and stick the advancing crops; water those that are in bearing. A few more may be sown, which will come into bearing if the autumn is favourable. *Radishes*, make a sowing of the various sorts. The Turnip-rooted are generally preferred at this season. *Vegetable Marrow*, these plants will require a liberal supply of water during the continuance of dry weather. Stop the main shoots to cause

them to throw out laterals. In all cases of earthing-up crops in dry weather, give them a good soaking with water previously.

FLOWER GARDEN.

The Roses should now receive particular attention, the standards to be well staked, the shoots disbudded and stopped, and the roots mulched or supplied with liquid manure as they may require. Budding to be commenced on all stocks from which the bark will rise freely, and such as are more sluggish in their circulation to be excited by a copious supply of liquid manure. Do not be afraid of thinning the free-blooming sorts of a Perpetual character. The old Bourbon Queen and the Crimson Perpetual, for instance, will produce twice as many blooms as they can permanently maintain. By a judicious and constant attention in this way, fine blooms will be insured until the frost sets in. Take up Tulip-bulbs whenever the weather will permit. We do not imagine that the late excessive rain has been of any service to them. When lifted do not separate the offsets from the parent bulb, or remove the roots or skin. These had better remain to a later period. Tie carefully the spindling shoots of Carnations and Picotees, not too tightly. Lay Pinks and Cloves for potting. Russian Violets may be separated and fresh plantations made. Remove all decayed flowers and seed-vessels from American shrubs. This will not only give them a neat appearance, but will in a great degree add to their strength, and as a result of this, an abundant bloom next season will be secured. Now is a fine time for layering Rhododendrons, Belgian Azaleas, &c., just as they are coming into full growth. Push Dahlias on by watering freely when the weather is dry; also, assist them by mulching the ground with decayed stable-manure. Take care that the plants do not chafe where attached to the blooming-sticks. The present is a favourable time for putting in cuttings of all the most showy herbaceous plants, selecting for the purpose the small shoots not furnished with bloom. A north border is a suitable place to strike them, and a hand-glass will facilitate their rooting. Pansies for autumn-blooming may be treated in the same way. Attend to the staking such of the herbaceous plants as require it before they get blown about and injured by high winds that sometimes occur about this time, and do not huddle the stems together as is too frequently done. Give plants infested with green fly a liberal washing with the engine, or syringe them with tobacco water. Mildew sometimes becomes troublesome after this season; it may, however, be kept in check by applying sulphur to the parts affected the moment it makes its appearance, first wetting them with water in order that the sulphur may stick.

FRUIT GARDEN.

Proceed with nailing-in the young wood of wall trees, and see that they are perfectly clear of insects; also stop any gross shoot, and endeavour to secure a fair supply of bearing wood all over the tree. Gross shoots that were stopped early in the season should be divested of all the laterals if not wanted to fill up vacant spaces. Strawberry-runners to be procured for new plantations. Those who cannot spare ground for a new plantation may prick them out in prepared beds about 6 inches apart, and remove them with balls in October. Also complete as quickly as possible the layering of runners for forcing next season, bearing in mind that one week now is worth two at the end of the month, and that strong well-matured plants are only to be obtained by early layering and good after-culture, and that no amount of care next spring will compensate for late, and, consequently, badly-rooted plants.

GREENHOUSE AND CONSERVATORY.

Should these plant-structures require repairs or cleaning, the stock may be removed with greater safety at this than at any other period; it is injudicious to leave the completion of such work until late in the season. This is generally a critical month with greenhouse plants out of doors. The fervid heat is sometimes so great as to produce the tropical winter of vegetation when the parching heat of the sun acts upon and produces in some degree a dormancy in the system of plants, and at other times when showers fall and we see the surface of the soil in the pots moist, we are satisfied until the drooping or withering foliage upbraid us for our neglect, and, perhaps, with Heath, New Holland, and other such plants it is noticed when too late to save. These ill effects may be avoided by plunging the pots in coal ashes, and by syringing the plants overhead of an evening, and examining them when doubtful on the subject by gently turning one or two out of their pots to see the state of

the ball, as it requires some experience to distinguish whether a plant wants water or not from the ring produced by rapping the knuckles against the side of the pot. W. KEANE.

DOINGS OF THE LAST WEEK.

MUCH the routine of previous weeks, such as staking Peas, hoeing ground, pricking-out as well as planting-out Celery, Broccoli, Cauliflower, &c., earthing-up slightly Potatoes to prevent the tubers being greened, cleaning Mushroom-bed, spawning fresh piece, regulating Cucumbers, and giving manure water to Capsicums, Tomatoes, &c.

FRUIT GARDEN.

Went over trees as much as we could get at them; thinning and fastening-in Apricot and Peach shoots; ditto Pears against walls; thinning shoots and picking the points off from dwarf standard Apple, Pear, and Plum trees; washed and engined Cherries and Plums against walls, using rather strong clear soot water; put the litter closer up to rows of Strawberries, and netted them from birds. Crops pretty fair, single specimens not so magnificent as usual. Those in front of an orchard-house are still rather the best for flavour. Have never seen, however, Black Prince finer out of doors, and what is better, many housekeepers are thanking Mr. Cuttill it has proved such a firm good preserving Strawberry, and though darker in colour, yet superior, on the whole, to the old scarlets generally so used. Keens' Seedling used to be very much in vogue for preserving, but it is much inferior to the Prince, being much more soft and juicy. Some late kinds, as Elton and Eleanor, preserve well, if not too much ripened. These do well whole in Currant juice. Find that from strewing the ground slightly with soot and lime, there is little probability of trouble from slugs or other crawlers. Planted-out forced plants as room could be found, as such plants turned out last year are by far the finest and most fruitful now. Was obliged to smoke the Peach-house, though the fruit is ripe and ripening, and we would have avoided it if possible, as the fruit will last us for some weeks yet. We, therefore, pulled all that were ripe, that they might not be tainted with the laurel and tobacco smoke; we found we could not keep the Aphis persicae, that horrid brown and black insect, in check without it, as some of the fruit was getting discoloured from their excrement. Had to do the same with the orchard-house, after being pretty well beaten with the dusting and washing process. The orchard-house was kept in smoke from two to three hours, but the smoke was chiefly from burning laurel leaves that had previously been well bruised. Smoke from tobacco alone for that period would have been dangerous. Last night we could not find an insect alive, but to-day a few have revived, and lots of small ones have appeared, so that we shall smoke again to-night. Some that were put into a close vessel, seemingly dead, appear so this morning, with the exception of a very few very sickly, but there also appear a number of small dots of young ones that were not there the night before, no doubt viviparous productions. We never had this aphid before last year, and thought we had got rid of it in the autumn; but if spared another winter we will look after it even more sharply. All other insects we have met with are trifles to it. The hot weather, and being busy elsewhere, enabled it to reproduce itself quickly, and its powers of increase are almost fabulous.

In the Peach-house we syringed well where we could do so without displacing the fruit, as the few aphids left alive were very sickly; and as that syringing would bring them to the floor, strewed the floor with lime and soot, and watered slightly all over with hot water from a rose. Watered Fig trees heavily, as we knew we could not make the water stagnant. Late ones in orchard-house are showing well, and were also watered. If a Fig in a pot gets at all dry when it has very young fruit, they will drop to a certainty. This is one reason why, without this care Figs in pots are more uncertain than those planted out. With this precaution, comparative dryness to ripen the wood in autumn, and more dryness and freedom from severe frosts in winter, water gradually given until all the ball is moistened in spring by the time the fruit shows, and regular moisture at the roots afterwards, without stagnant water, no tree does better in a pot than the Fig. Without these cares it will be better planted out, and stubby shoots secured by confining the roots, and pinching the shoots. Went over the trees in orchard-house; and as respects Peaches, Nectarines, Plums, &c., gave them pretty well their final thinning of fruit, as most of them are set,

and altogether have set some ten or twenty more fruit than could be left. We fear we have pretty well overdone the Cherries with crops, yet the trees do not show it. We must try and get some more plants another year. We hear that such kinds as we have been growing in an open house, and gathering for three weeks, and which in ordinary seasons would not be ripe for nearly a month out of doors, are considered better flavoured than when grown out of doors—such as Bigarreau, Napoleon, Belle Magnifique, Reine Hortense, or even Empress Eugénie, to say nothing of May Dukes now over, unless a few late ones. These have scarcely been touched by an insect, though the beetle was so troublesome on the Peaches. It is right to state, however, that some of the trees of the Peaches were in rather an unhealthy state before they were covered with glass.

Gathered Melons from frames before they were too ripe, and potted-off others for succession, as we have kept the soil so dry that there is no great chance of the old plants breaking strongly. In planting afresh, will put in small drain-tiles upright, that we may moisten the soil beneath without wetting the top as the fruit approaches maturity. Placed the fruit thickly set in a brick pit on saucers. They had previously been elevated in pots, but we like the fruit to be shaded by the foliage instead of exposed. Proceeded with cutting-out bunches of Grapes, and thinning those left in a late vinery as we could get at them, as the bunches will have to hang through most of the winter.

ORNAMENTAL DEPARTMENT.

Proceeded with potting, &c., as detailed in previous weeks. *Ranunculuses* ripening should be taken up. Tied herbaceous plants; prepared for doing so with Hollyhocks. Hoed the beds on lawn, and tied and pegged where necessary. Mowed and machined the grass on lawn; find that Green's single-man machine of 16 inches is liked better than a two-man machine of 22 inches. One of our neighbours works a twenty-two-inch one with one man; but I should not like to be the man. The lesser machines are so beautifully hung that one man uses the sixteen-inch one with less toil than two men do the twenty-two of most makers. We find that the objections we made a year or two ago about the chains do not apply to the nice steel chains now sent out. We are glad to say that our men prefer them by far, and as being easier work than the scythe. At the same time people who send men to cut long grass, and the ground is all up and down and unlevel, need not be surprised if the machine is thrust into a corner, and the men cannot and will not use it. We must, however, pass this and a great many other matters over to say a few words on

SHADING.

Owing to the extreme heat and force of the sun, we shaded the upright front of our conservatory by painting the glass with jelly size made hot to boiling, putting in a quart of jelly, a half quartern of turpentine, and the same of boiled oil, and about the size of a walnut of pounded whiting. This is put on pretty hot and very thinly on the glass when dry, and then a dry brush daubs it, and it looks neat like ground-glass, and will keep on until the dark days of autumn. Some pits needing a dense shade had the same material put on with a whiting-brush, and no nice daubing given afterwards. For a slight shading in an extra hot day, we find nothing better than just colouring some water with whiting and throwing it on the glass with a syringe; and thus the glass may be pretty well covered, or just slightly spotted to blunt the force of the rays. Some people object to all such simple modes, and equally object to blinds and rollers outside; but would like a neat permanent shade for their greenhouses inside, so as to be independent of rains, winds, &c. Well, the best we know for this purpose is bleached calico or linen, or white canvass made into pieces to suit one or two lights. On such pieces place small rings top and bottom, and every 18 or 24 inches along the sides, and place these rings on hooks at similar distances in the rafters and sash-bars. Such nice blinds may remain up from the month of April to October, and even then it would be easy to unhook them if required in dull weather. If the material is thin and white, this unhooking will seldom be necessary during the summer, and the method has much of neatness and even of economy in comparison with outside blinds to recommend it. Of course, such blinds might also be made to roll; but that would increase the intricacy and the expense, and for particular places we would prefer these removable blinds.—R. F.

TO CORRESPONDENTS.

We cannot reply privately to any communication unless under very special circumstances.

WORMS IN STRAWBERRIES (Tyro).—The "worms" are Snake Millipedes (Julus). We know of no mode of preventing them eating the fruit. They breed in the soil, and the only effectual remedy would be to pare and burn 6 inches depth of the entire surface soil.

WORKS ON GARDENING (A Young Beginner).—"The Orchid Manual," 2s. 6d., "The Fern Manual," 5s., and "In-door Gardening," 1s. 6d., are all published at our office, and can be had free by post if sixpence additional is sent. They contain all the information you mention.

SEEDLING VERENAS (H. Barham).—They were totally shrivelled.

INSECT ON CUCUMBER LEAF (C. P., St. Margaret's).—It is a small crab-spider (Chelifer cancrioides), which, doubtless was among the red spiders on the Cucumber leaves for the purpose of devouring them.

IMPROVING A LIGHT SOIL (A. L., Birmingham).—Clay, chalk, marl, and bricklayers' limy rubbish are the only additions to your light soil that will permanently improve its staple, and thus enable it to retain moisture better in summer. In the absence of those improvers cocoa-nut fibre dust, half-decayed tanners' bark, and the vegetable mould you mention, would be good additions. If you cannot permanently improve the staple of the soil the best compensation is mulching the surface. If this were done between the rows of crops and over the roots of trees with spent tanners' bark, or, still better, cocoa-nut fibre dust 2 inches deep, we believe that with liberal manuring any hardy plant may be well grown on a light soil.

GUANO WATER (A Cottage Gardener).—Half an ounce to a gallon of water is strong enough for potted plants, and one ounce to the gallon for plants in the beds.

CAMELLIA SOIL (Idem).—Turfy loam and sandy peat in equal quantities form the best soil for Camellias. What is written in "Work for the Week," and "Doings of the Last," except as to the stove and greenhouse departments, are as applicable to the cottage as to the mansion, and we are always prompt to answer queries. Amateurs should have our "Garden Manual," and our "In-door Gardening," and "Out-door Gardening." In them will be found all the usual routines of culture for common plants; and with these and answers to queries in our correspondent columns no one need find gardening difficulties frequent and never insuperable.

MOWING MACHINE (Civis).—Any one of the machines will do its work well. We cannot recommend any maker.

APPLE BLOSSOM (John Shaw).—The Apple blossom is a fine semi-double flower, which we suspect is not permanent. Has it come so before? If it has, graft the shoot which produces them on an Apple stock, and you may be able to secure this new form.

MANAGEMENT OF ANEMONES-BRED (W. B.).—If the foliage of the Anemones be quite yellow, take them up at once. When left in the ground the matured root is prone to start into growth. Choose a fine day to take them up, dry them in the sun, and keep them in a dry cool place until October, when they may be planted in the bed again. After the Anemones are taken up add a little fresh soil to your bed, fork it in, and you may then plant any kind of bedding plant in the bed, as Geraniums, Verbenas, &c. If you do not like the trouble of taking up the Anemones every year, and have not the convenience to keep bedding plants, we would advise sowing some of the showiest annuals between the Anemones the last week in May, scattering a little fine mould over them. Any of the following make good beds:—*Blues*.—*Nemophila insignis*, *Nolana atriplicifolia*, and *Convolvulus minor*. *Reds*.—*Centranthus macrophyon*, *Saponaria calabrica*, and *Candytuft*. *Yellows*.—*Venidium calendulaceum*, *Erysimum Peroffskianum*, and *Bartonia aurea*. *Whites*.—*White Candytuft*, *Sweet Alyssum*, and *Nemophila insignis alba* and *maculata*. The best plan, however, would be to take the Anemones up and plant Stocks, Asters, French Marigolds, or anything of that kind immediately.

SEEDLING PEACH (Alice).—After waiting so long, it would be a pity to destroy the Peach tree now; but you might insert a number of buds in it near the base of the shoots. It may be worth nothing when you get it; but to prove what the fruit would be, we would thin the wood of the tree liberally, so as to give sun and air to the shoots left, and thus induce the ripening process. Then, in the middle of September, we would either root-prune, or replant this tree, and keep the tree shaded from sun until the leaves would stand without flinching. This would also encourage ripening of the wood, and lessen mere growth the next season.

CROSS-BRED GERANIUM (Christine).—We discovered only a small leaf, of which we can say nothing; but, from the description, we should have doubts as to its being a cross with Geranium. We can, therefore, as yet say nothing as to the hopes entertained.

CROSS-BRED VERENAS (Idem).—As to the crossed Verbenas, we expect something of the kind took place that our valued coadjutor, Mr. Beaton, demonstrated as respects Verbenas. Perhaps, however, your dwarfs might be made to grow. If not, like the piny Geraniums, they will be more interesting than useful. Such facts, however, are most valuable for enabling us to form correct theories. Your deductions from this and general facts are quite correct; but the more care in hybridising, the better may the results be expected to be. We earnestly hope that our friend Mr. Beaton will be able soon to enlighten us on all such matters.

GRUBS ON VINE LEAVES (X. F. Z.).—It is useless sending a leaf with insects wrapped up in an open letter. They ought to be securely enclosed in a box, or, at least, covered up securely with oiled paper. There were no insects on the leaf, but marks as if thrips had been there; but then we are doubtful if it was thrips from your saying that they eat into the leaves and the berries; for, though the thrips will soon suck the juice out of leaves and render berries very unsightly, it is seldom they make holes that can be easily seen. Your best remedy is to persevere with the smoking, unless you would go over the lower side of the leaves with a sponge and water, when you would most likely catch them.

HOLES IN VINE LEAVES (A Subscriber, Kilmarnock).—We think the leaves are injured by a caterpillar or some kind of weevil. Watch the place with a lantern at night, wrap the stem round with wool and oil, and that may keep them off.

ERROR.—At page 416, last line of first column, for "5 inches" read "5 bars."

EXHIBITING STRAWBERRIES (Ellen).—At the Royal Horticultural Society's Kensington Exhibitions the Society provides dishes; but the exhibitor, or the exhibitor's deputy, must attend to arrange the fruit.

SEEDLING PANSIES (Taffy).—We do not think that the flowers sent are equal to many of the same character which are now in cultivation. The Geranium was so fallen to pieces that we could make nothing of it.

BLACK DEPOSIT ON PELARGONIUM LEAVES (Elizabeth).—The black appearance is chiefly the excrement of insects, as green fly and thrips, particularly the former. The leaves had better be removed. We discovered no live insects. The warty appearance on the back of the leaf is almost a sure sign of stagnant water and insufficient drainage, or a too low close atmosphere. Good root-action and a dryish airy atmosphere are the best antidotes for this, and also for securing a healthy vegetation and freedom from insects. If the plants are in bloom and green fly on them, you had better remove them by the fingers, as smoking is apt to injure the blooms. If not in bloom smoke, but do it judiciously—not too much tobacco, nor yet allow the smoke to be hot.

VINE-BORDER COVERING—TREBBIANO GRAPE (B. J. J.).—You do not furnish us with enough of evidence to decide whether the gangrening of the berries has anything to do with the condition of the outside border. If, as you say, that the Vines are healthy and the roots near the surface, then we should be inclined to think that the fault was to be found in management, overcropping, &c. However, there can be no question that covering the border with glass will tend to the well-being of the Vines, as the light will get to the soil and cold rains be excluded. We have never yet done so ourselves, but we can see what an advantage such a covering would be; but that advantage will chiefly depend on the ground of the border being exposed beneath the glass in summer. If at such a time you cover the border with plants, either in pots or otherwise, then we have no great faith in the advantages you will attain. We know one case where Vines were much injured by such a glass covering, but the border had its top in a sloppy state all the summer from watering plants upon it, and the dense foliage kept the sun's rays from reaching it. The Trebbiano Grape is a strong-growing kind producing large white bunches, which, if well ripened in autumn, will hang all the winter with ordinary care, and the flavour is rich and sweet. Some people are very fond of it. It is chiefly useful in a late house.

CUCUMBERS DEFORMED AND YELLOW (A Perplexed One).—We fear you are expecting too much fruit from your Cucumbers. Though some varieties show three or four fruits at a joint seldom more than one swells, or should they all swell they are short crooked things, but more frequently they turn yellow at the point, as in your case. This is owing to the roots being unable to supply nourishment to the young fruit in sufficient quantity to keep them swelling freely. One cucumber at a joint, and that in every foot of space, is enough. Cucumbers seldom turn yellow at the point in the early stages of their growth, or not until a good many have been cut, which we attribute to a little over-greediness on the part of the cultivator. Although we consider too heavy cropping the chief cause of Cucumbers failing, yet anything like a check to the roots will bring about quite as unsatisfactory results. Too little bottom heat, too much or too little watering, or watering with water considerably lower in temperature than the heat of the bed causes an inactive state of the roots, and that will cause the young Cucumbers to die-off at the point. Syringing the plants with cold water, and allowing water to drip off the ends of the young fruit, and the sun striking them in that state, scalds them. Allowing a current of cold air to suddenly reduce the temperature will throw the sap back and hinder the fruit from swelling. Should none of the above account for the failure, water with weak liquid manure twice a-week, warmed to the temperature of the bed; for, if the fruit forwarded be a fair specimen, your Cucumbers lack nourishment. Keep the house moist by sprinkling every available surface twice a-day with tepid water. Give air early in the morning, and shut up early, never allowing the thermometer to fall much before you shut up. From 75° to 85° is quite hot enough for bottom heat in any stage.

GLASS (W. X. W., Bingley).—The sample enclosed by you would do very well for pit-glazing.

NAMES OF MOSSES (J. E. Dangstein).—1, Hypnum splendens; 2, Hypnum tritetratum; 3, Dicranum undulatum.

NAMES OF PLANTS (E. S., Hampton Court).—One of the Hippeastris, but not recognisable (if, indeed, it be not one of many wholly unrecognisable seedlings) after being squeezed flat. (*J. K. Rossiter*).—Cannot tell a plant from a mere leaf like that. (*James McBey*).—It is what is called *Echites picta* in gardens. We do not know *E. rutilans*. Camellias sometimes go spotted like yours; it is a sign of deficient vigour. (*W. B.*).—Looks like *Erigeron philadelphicus*. (*Omega*).—1, *Lotus corniculatus*; 2, *Orchis pyramidalis*; 3, bad, some crucifer without leaves; 4, *Matricaria chamomilla*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

EGGS SAT UPON AND THEN CHILLED.

I SHALL feel obliged by any of your correspondents giving me their opinion, from experience, as to the time when eggs being under a hen and then left would be bad. I put fifteen Sebright eggs under a hen at ten o'clock at night. She appeared to sit close. In the morning at six o'clock she was off the nest and the eggs quite cold. At eight o'clock the same morning they were put under another hen, and every egg proved addled. Would the six or seven hours be sufficient time to cause this? How soon does vitality commence, so as to spoil eggs if afterwards left to get cold?—**Evesham.**

[The fact that at six o'clock the eggs were quite cold, and that they were not put under another hen until eight, would account for their being addled. The hen should always be tried for three days on common eggs to see that she is really broody. Upon the question how long eggs may be sat upon and yet not

be spoiled if chilled, we should like to hear the results of the experience of our readers; and shall be obliged by such results being communicated, stating at the same time the variety of fowl by which they were laid.]

A FACT FOR NATURALISTS.

To-day I have an opportunity of reading of two cured specimens of the "Pintailed Sandgrouse" (*Pterocles setarius*), being in the possession of Mr. Wm. Emmett, of Pudsey, having been "murdered" by him only last Wednesday, at a neighbouring village called Farsley, and, so far as I can see, if all "naturalists" are of Mr. Emmett's stamp, both these and all other rare animals will continue to be very scarce, both on the undulating hills of Farsley and all other parts of these dominions. No doubt, now that Mr. Emmett's exploits have been duly chronicled, other naturalists (and members of the sparrow-shooting societies) will be on the look-out for the fortunate twelve out of the fourteen which so far have escaped the range of Mr. Emmett's rifle; and it seems very probable that the whole covey of fourteen will be utterly destroyed or driven to more barbarous climes to seek that existence which they are denied in this civilised land of ours.

It seems a great pity—nay, I may say, it is a national misfortune—that so many of my countrymen should exhibit such selfish propensities (I cannot use a milder term), in destroying those rare specimens of the feathered tribes which occasionally visit these shores, in order that they may have the gratification of exhibiting in their private collections stuffed and inanimate specimens of what but for them would be living types of the species to which they belong, and be a means of instruction and a source of pleasure to thousands.

I have not the slightest knowledge of Mr. Emmett. No doubt he is an enthusiastic if not a distinguished naturalist, and I give him credit for the best intentions; but I put it to him, whether he is not contracting rather than expanding a knowledge of nature by such acts? If the "Sandgrouse" are common on the arid plains of Persia, and found in plenty on the coasts of the Mediterranean, we have no occasion to shoot the few which visit us in order to procure specimens for our instruction.

Thanks to Mr. Emmett for preserving for us the plumage of the "Pintailed Sandgrouse" stuffed with "shoddy," with intelligence beaming from a pair of glass eyes; but no thanks to him for depriving us of the pleasure of seeing our native woods and valleys adorned with living specimens of these persecuted beauties, and debarred the pleasure alike of studying their habits, and admiring the splendour of their living forms.—**PRO BONO PUBLICO.**—(*Leeds Mercury*.)

[Heartily do we coincide in this condemnation.—**EDS. J. OF H.**]

PROLIFIC DUCKS.—I can add my testimony to your correspondent's relative to Ducks laying soon after having hatched a brood. One of my Ducks brought out a brood on Monday, May 4th, and on the following Sunday had laid three eggs. Even while sitting she did not avoid the drake. My other Duck was then sitting, and brought out her brood on the 2nd instant, and yesterday laid her first egg. The Duck that hatched her eggs on the 4th of May had on Friday last, the 12th of June, twenty-one eggs in her nest, and is now sitting on seventeen or more. She began to sit on Sunday last. A shopkeeper in this village informs me that one of his Ducks laid several eggs under the coop, and he has already (June 23), had two broods from the same Duck this year.—**K. O. T.**

LARGE EGGS OF SPANISH FOWLS.—The Rev. C. A. Moore, of Sutterton Vicarage, Spalding, bought some Spanish poultry about two and a half years since of Mr. Fowler, of Aylesbury. He says, "I have been very particular in keeping up the breed, and have had some very remarkable eggs from my stock. One egg which a hen produced about a fortnight since weighed 3½ ozs.; but the most remarkable one is that which the same fowl laid on Saturday, and which actually weighs nearly 4½ ozs. This egg I have had painted white in order to preserve it. My fowls have every disadvantage—being confined to within a very small space."

EXPULSION OF YOUNG BEES.

I HAD on the 1st of May a very strong hive of bees, a swarm of 1862. I cut a hole through the top of the hive (an old conical one) about the above date, and put on a super about the last week in May, when it was immediately filled, and the bees began to work. On the 1st of June it was abandoned, and the hive threw an immense swarm the next day. On the 13th the hive threw a second swarm, of which I cannot tell the weight; but there were about three quarts of bees. Two days after this I saw quantities of young bees unable to fly, ejected from the hive; and these were carried out again directly if returned. Two days later (the 17th) the hives threw a third swarm nearly or quite as strong as the last. And to day (the 18th) I again see scores of young bees under the hive—evidently ejected. There were also three young queens which were dead. The other bees were all alive and crawling about. I returned some dozens, but they were directly seized, carried out, and dropped on the ground. I am certain that many hundreds have thus been destroyed and cannot account for it, as food is very plentiful, and the hive though much weakened by throwing three swarms, has plenty of bees in it, and a very large number of drones. Indeed, I was almost led to fancy the destruction of young bees was because the drones took more food than the workers could provide; but there may be some other cause, and I shall be most glad to learn it.

The following incident occurred here a few days since. A swarm left a hive belonging to a bee-owner, and fortunately was seen to go off. They flew direct to a deserted hive full of old comb, standing in a cottage garden nearly half a mile off, where they entered and remained. The owner saw them go in and recovered them, making some compensation for the hive, in which I saw them to-day working beautifully.—ROBERT LEVETT.

[Although we never met with a similar instance, we should be disposed to attribute this wholesale expulsion of the rising generation to unfavourable weather setting in immediately after swarming had taken place, and thus calling into play that remarkable instinct which leads bees in extremity to sacrifice the weaker members of the community. Liberal feeding would probably have put a stop to this massacre of the juveniles. Nothing is more common than a swarm taking possession of a deserted hive.]

TRANSPOSING STOCKS—A QUEENLESS SWARM—DRIVING.

I HAD, on the second Wednesday in June, a second swarm, which I hived into a box about one-third full of comb and honey; in fact, all the upper part, the lower having been cut away because of its age. Having read of some of your correspondents transposing hives in order to strengthen weak stocks, I thought I would do the same with this, and therefore in the middle of the first fine day, the fifth after being hived, I changed places, the swarm with a strong old stock. The result was much fighting for two days and the weakening of the old stock as though a prime swarm had left it, without a very perceptible strengthening of the swarm. I now fear the swarm has no queen, because no pollen is carried in; nevertheless, as they are quiet, I infer they have some brood from which to raise a sovereign, but comb-building does not go on.

Now, were I to feed copiously, would the bees, having no fertile queen at liberty, build drone-comb only, permanently injuring the stock, a common square box with close top? And would it not be better to wait till pollen is carried, and then feed? What precautions are necessary in transposing hives to strengthen weak ones? What precautions are necessary in artificial swarming in consequence of the tendency of bees to build drone-comb while raising a queen, honey being abundant? How are the impressed wax plates fixed in frames, and is it desirable to employ them when perfect combs cannot be had? In the Woodbury straw hive are the bands of straw horizontal or perpendicular, and is it fitted with a straw cover?

There is one thing more. I made two unsuccessful attempts at driving to form an artificial swarm. The stock was a square box packed full of bees; the time I selected 5 A.M. The stock was carefully turned up and another box the same size put on, the box with comb afterwards tenanted by the second swarm above referred to. After drumming about ten minutes and thinking about half the bees had gone up, from the view I had through the box windows, I lifted the upper one off and put it in what

was to have been its place on the board of the old stock, treating the old stock according to the Bee-book. I congratulated myself on having cleverly accomplished my object; but in about an hour it was evident I had failed. I was, therefore, obliged to restore the hives as before. Nothing daunted, I tried again next morning and drummed longer, taking about half an hour in the process. Again I thought I had succeeded, though the bees were more savage; but again time showed it was another failure. I tried no more. It does seem to me there is some mystery in driving. I thought I was very careful, gentle, and precise in adhering to the directions. I am half inclined to suppose the stock had no queen at liberty, being engaged in rearing one, which would account for the failure; but I have had no experience in driving, and do not like to be beaten. The stock was populous, but has been at a standstill for a month, although rich in sealed honey. Does driving usually succeed, if continued long enough, in getting all the bees out? Are there some things to be carefully avoided in driving?—A. B. C.

[Transposing stocks succeeds best in the middle of a fine day, when honey is very plentiful. This is the grand secret of success. Every bee returning full of honey is usually a welcome visitor to any hive, and in this case little or no fighting results; but when honey is scarce and strange bees return with empty pouches, they are ignominiously expelled as a race of paupers attempting to saddle themselves on the resources of the community. No such transfer, however, should be attempted with a second swarm until it is certain that the young queen has commenced egg-laying. In your case the natural result has evidently followed. The queen, on her return from one of her excursions, has gone to the old spot and has been put to death by the strangers. As no brood can now exist in the hive, the colony must speedily dwindle away unless it is supplied with brood-comb, or, better still, a couple of royal cells; or, best of all, a fertile queen. If you wish the latter, and cannot obtain it on the spot, write to T. Woodbury, Esq., Mount Radford, Exeter. Bees without a queen build drone-comb only. Do not, therefore, feed copiously until this all-important deficiency has been supplied. Artificial should generally imitate natural swarming in this respect, that the swarm has the old queen and consequently builds worker-comb, whilst the queenless bees remain in the old hive, which is already filled with comb. Artificial partition-walls are easily fixed in frames by means of melted wax. The vendors will give you full instructions on this point. They are a great assistance when natural combs are unattainable. In the Woodbury straw hive the bands are horizontal. It is usually fitted with a wooden cover. We can add nothing to the usual instructions for driving bees. You should operate in the middle of a fine day, and persevere until you succeed. When once you have accomplished it all difficulties will vanish—at least, it was so in our case.]

LOSS OF A SWARM—DISTANCE BETWEEN BARS—ABNORMAL BEES.

HAVING procured a stock of bees last February, and being light, I fed them well through the spring till May 23rd, when they swarmed, weighing but 2½ lbs. Hearing piping two days before, I concluded the prime swarm had escaped unobserved. I wish to know if it is as my books tell me, that piping is never heard till after the first swarm. There has been no appearance of another. Am I to expect more from it?

I have used bar-hives 1½ inch from centre to centre, but found them too wide. What is the proper breadth, as bar-frame-hives are useless if each bar does not exactly contain a comb on its centre?

I here is on some of my bees the unusual appearance (at least to my eye), of an extra pair of antennæ of a yellow colour, growing from the insertion of the real antennæ. Have any of your numerous apiarian correspondents noticed it, and what may the cause be?—BEE FRIEND.

[Piping is so rarely heard prior to the issue of a first swarm, that you may be tolerably certain that yours has escaped unobserved, nor can you expect that another will now issue. Our bars are about a sixteenth under 1½ inch from centre to centre; but we consider the latter a very good distance. Singularly enough the proceedings of the bees themselves do not always afford the best guide as to distance, as they are so much in-

fluenced by the requirements of the moment. If honey be very plentiful they are apt to build thicker combs (almost to the exclusion of brood), than when honey is scarce, and the queen lays an egg in every cell as soon as it is braced out. We should be glad if you would forward in a small box by post a few living specimens of bees possessing an extra pair of antennæ.]

BEES DYING IN JUNE.

LAST year I had not a single swarm out of four hives. This year I have not had any yet, but expect three daily out of the three hives I have living. Last week a stock died, and I do not know the cause. They came out of the hive, and died on the board. When I saw this I took up the hive and saw but a very few bees left in, and they seemed quite stupified, and they all dropped on the board dead. I took out two combs, and found very few of the cells with young bees in them, these had grubs in them, but they were dead. The hive in May seemed quite well, and worked hard. What was the cause of death?

Last year I had a stock which died in March, with plenty of honey in store, but they were in a Nutt's hive. The bees were well and strong in February, and in March they died, and when I came to look at them the combs were quite mouldy. I thought that I must have taken the hive from under cover (I have a wooden shed) too soon, as it was very wet and cold in March last year.—W. W. C.

[The first-mentioned stock died of starvation—pretty strong evidence that the honey season in Lancashire is a bad one. The second was probably destroyed by that pest of wooden hives, internal moisture. Feeding would, of course, have been the obvious remedy in the one case, whilst ventilation might have palliated the evil in the other.]

VARIATIONS IN COLOUR OF THE COMMON HIVE BEE.

HAVING a wish to improve the circumstances of a poor neighbour in the country, I empowered him to purchase a hive and stock of bees, for which he (or rather I) paid 14s., that is 2s. for the straw hive, and 12s. for the bees. On going to see them a few days afterwards, I was surprised to find them so unlike my notions of bees—so slim, so small, so colourless, they answered to the French word of *mouches à miel*, but not of *abielles*. The man, however, declared he was used to this sort, and that they were making honey very fast. The situation lies between two parks, where, although there will soon be many lime trees in bloom, there are not many other flowers. Some mignonette and some borage have been sown, and I am told that buckwheat is a great favourite. I do not find these particulars mentioned in THE JOURNAL OF HORTICULTURE; and certainly the description of bees, whether Ligurian or British, by no means seems to correspond with these. Can they be wild ones?—A. A. Y.

[*Apis mellifica* is the only species of hive bee, whether wild or domestic, indigenous to Great Britain; and to this species the bees in question undoubtedly belong. They sometimes vary slightly in colour; and Mr. Lowe, of Edinburgh once possessed a variety of a lighter tint than usual, but these appear to be mere accidental variations. The Ligurian bee (*Apis Ligustica*) which has lately been so successfully introduced into this country, differs so notably from the ordinary bee, that it is ranked as a distinct species.]

SIMULTANEOUS ATTACKS ON DRONES.

On the only fine day of this week (or month), I received an expected first swarm from A, Woodbury bar-hive, two hours afterwards whilst looking on I observed a great and general issue of drones from A, B and C, and B and C having swarmed once and twice respectively, the workers appeared to attack the drones, riding on them curled up as they attack robbers. Being severely stung, I did not observe much more, but was surprised. First, Why should drones be turned out of a hive directly after the first swarm issues? Secondly, Why should the drones issue, if A, B and C be simultaneous, or were they all merely at play? I observe a few but not many dead drones about, and can still see them in A through the glass.

I have an old straw hive that was nearly burnt out by the accidental firing of my Vine-border when covered with litter. The bees issued for a moment on the 17th of June, but returned. They have clustered out largely for some weeks, and so continue. I purpose taking it when the proper time arrives? To-day I have added a glass-frame bar-super covered, to induce them all to enter and make comb. Is that right? I should like, on the issue of this swarm to join it (by sprinkling) to Wednesday's A swarm in a new complete frame-hive bought from Messrs. Neighbour. Will this answer with a housed swarm that has done nothing? I have fed them.—T. P.

[If the young queens in B and C were impregnated, the attack upon the drones is all in due course, and will probably be persevered in until all are expelled; but with A the case is different, the assault seeming to be a mistake, which when found out was at once discontinued. Owing to the bad honey season after the issue of the swarm, the bees found themselves with a sparse worker population, and scanty stores, which there was no immediate prospect of replenishing. These are just the circumstances which lead to the destruction of drones, which would, doubtless, have been consummated had not the virgin condition of the queen necessitated a reprieve. That all three stocks should inaugurate a simultaneous attack was a remarkable instance of like causes producing similar effects. Adding a super may be of use, if the weather improves; at any rate it will do no harm. The probability is, that the two swarms will unite peaceably.]

BEES NOT ENTERING A SUPER.

I HIVED a swarm of bees on the 17th of May, and in less than a month the hive appeared by its weight to be filled. For more than a week the bees have clustered out round the mouth of the hive, and small particles of comb are scattered about it also. There does not appear any diminution in the activity of the bees. In order to prevent a maiden swarm, as I believe it is called, I put on a good-sized glass super. The bees make no attempt to fill it. I should not have intruded upon you, but I cannot explain the cause of the scattered particles of comb in the front of the hive, and shall feel obliged by a notice of it in your paper.—A BEE-KEEPER.

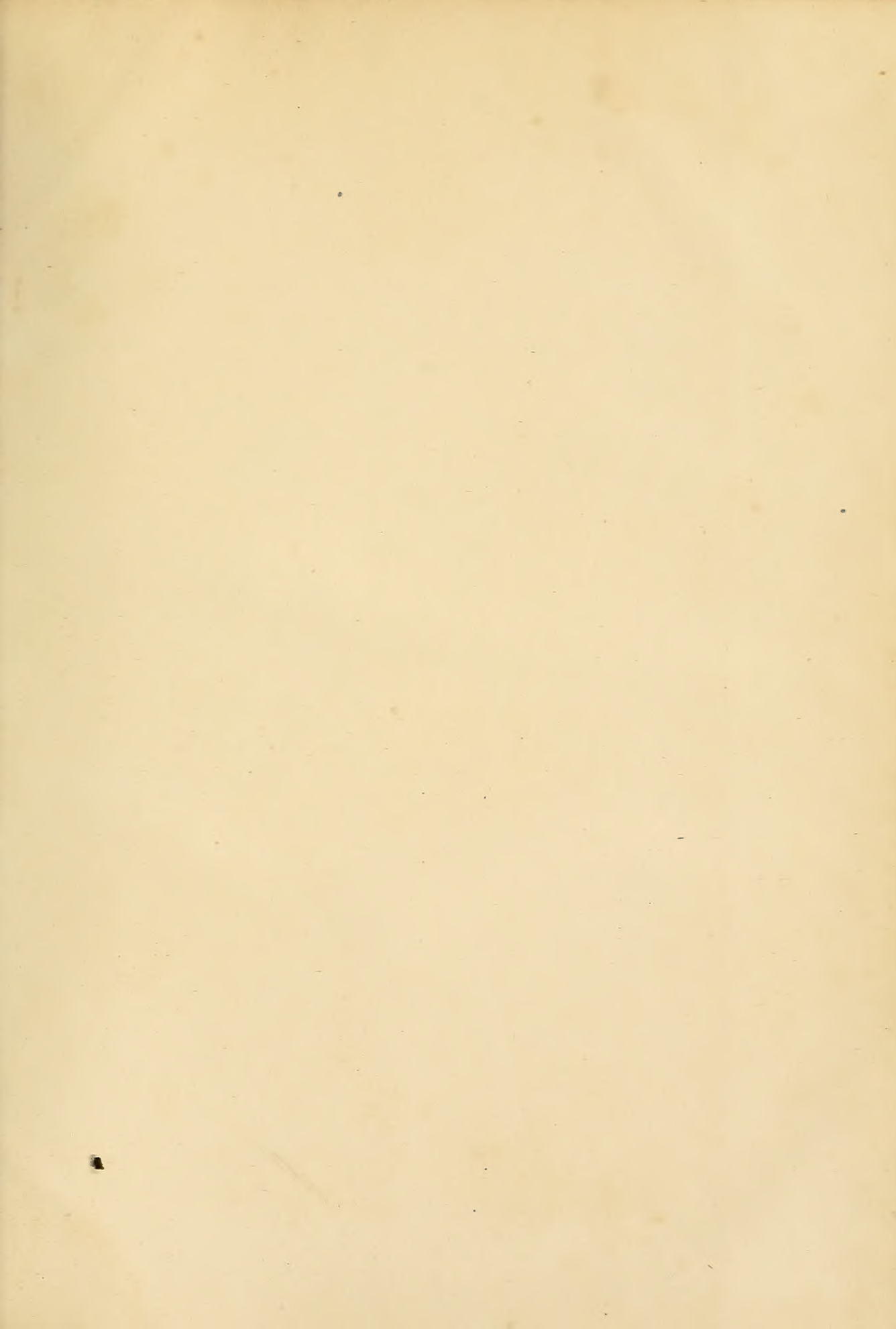
[The particles of comb arise from the unsealing of the brood, thousands of young bees having quitted their cradles during the past few weeks. Try inserting two or three pieces of guide-comb in the super, and filling the cells with honey or syrup.]

PRESERVING PEAS GREEN FOR WINTER USE.—This desirable result has certainly not yet arrived at the state of perfection we expect of it, and we have heard of many failures; but the following mode has been reported to us by a person well qualified to judge of such matters, as being very successful:—Carefully shell the Peas—then put them in tin canisters, not too large ones; put in a small piece of alum, about the size of a horsebean to a pint of Peas. When the canister is full of Peas, fill up the interstices with water, and solder on the lid perfectly air-tight, and boil the canisters for about twenty minutes; then remove them to a cool place, and they will be found in January but little inferior to fresh, newly-gathered Peas. Bottling is not so good—at least we have not found it so; the air gets in, the liquid turns sour, and the Peas acquire a bad taste.—(*American Gardeners' Monthly*.)

OUR LETTER BOX.

ILL-SUCCESS IN HATCHING (*B. H.*).—Your case is that of many this season, and is in a great measure attributable to the sharp frosts during the spring. The outer eggs get chilled, and then assume the appearance you describe. It is a good plan to put not more than seven or nine eggs under the hens for early hatching.

DORKING COCKERELS (*M. D.*).—If you wish to show Silver-Grey Dorkings, none of those you mention are fit for the purpose. It is imperative that cocks in those classes shall have black breasts and tails. No. 1 has not either. They must also have pale, almost white, hackles and saddle. No. 2 is here at fault; and as in a matter of colour (at least so far as poultry is concerned), comparison is not allowed, the fact of No. 3 being blacker than No. 1, but nevertheless not quite black in breast and tail, will not help you. If you are bent on showing in a Silver-Grey class, if you have hens or pullets of faultless colour, and if No. 2 is perfectly black where required, that is the bird to show. If you are showing for general competition, take No. 1 by all means. It is the height of absurdity to be deterred by a few white feathers on the breast, or a white shade on the tail. You have to look for symmetry and size, and save in a White or Silver-Grey class, colour has nothing to do with decisions.





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